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the American Perfumer and ESSENTIAL OIL REVIEW

COSMETICS · SOAPS · FLAVORS

EST. 1906

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Technical Editor

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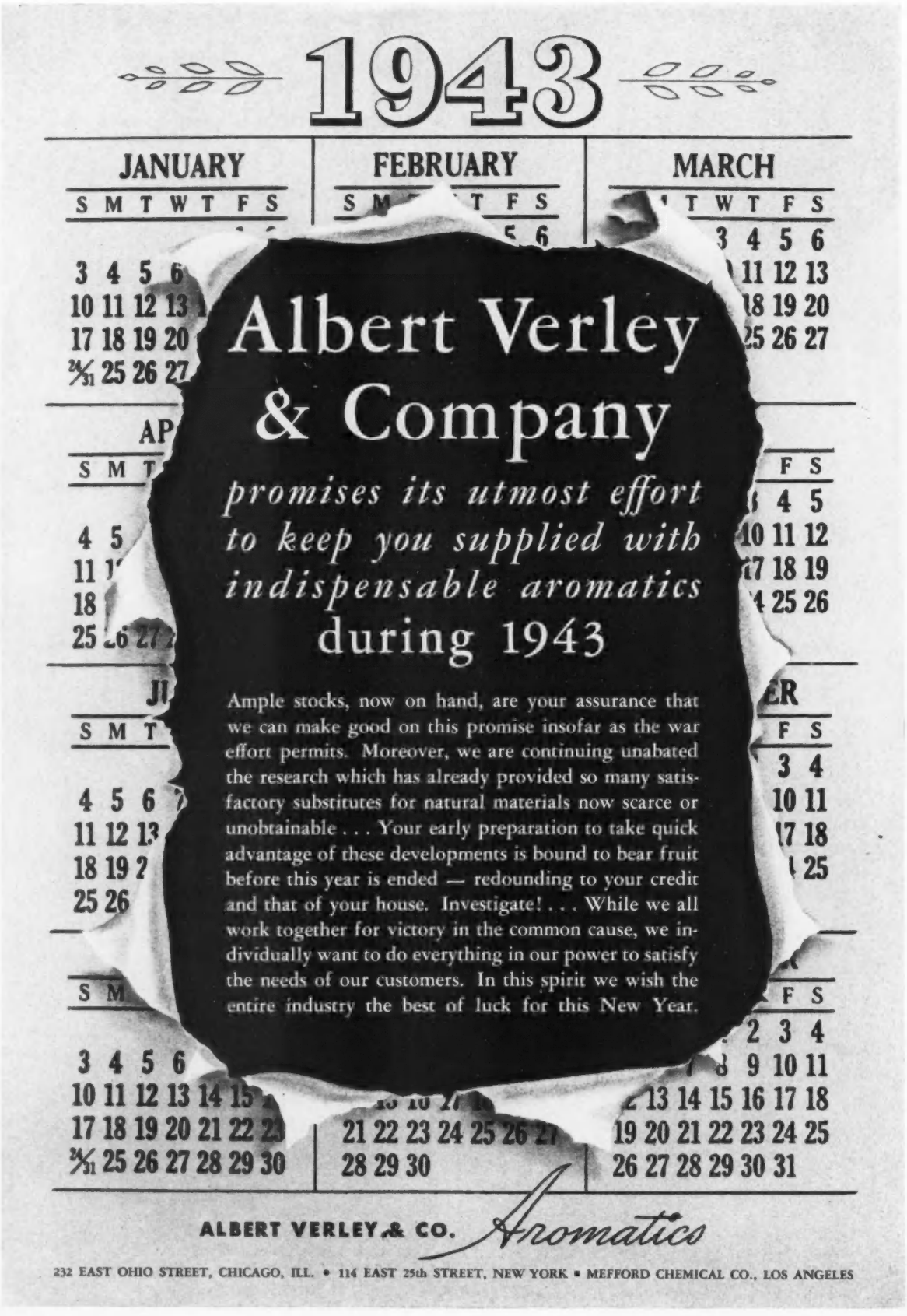
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desiderata

Comment on interesting new chemical developments and their application to cosmetics and toiletries.

by MAISON G. DENAVARRE

DEHYDRATED COSMETICS

A large percentage of certain cosmetics is water. In the interest of conservation of space and transportation, among other things, it is not out of line to consider the possibility of making dehydrated cosmetics. Depilatories, dentifrices, hair waving gums, permanent waving solutions, shampoos, shaving creams and beauty masks are only a few of the products that could be made in a dried or at least more concentrated form. Some of these already are available in a dehydrated form, such as dentifrice and depilatory. But if the industry is restricted in some way on transportation, then more items will have to be concentrated if the industry intends to try to keep up the dollar volume.

BROMO ACID SOLVENT

We are fooling with a new material which is a bromo acid solvent that can be used to stretch the limited stocks of castor oil. The material has a rather heavy viscosity, bland odor and taste, and seems interesting. More on this item later when our work is completed.

LEG MAKE-UP

Silk stockings are just about washed up. Nylon is as scarce as a raise under the wage ceiling. Rayon is about all that is left for stockings, and the rayon situation seems precarious, to say the least. What, then, will women do for stockings? I'll tell you. They will use cosmetic stockings to beat the band, for what looks worse than an anemic looking leg on an otherwise well

dressed woman? There's a swell chance for a bit of "before and after" advertising copy, for it sure makes a whale of a difference to use leg make-up. Educate women to it! Right now a lot of them are afraid of being classified as hussies for using leg make-up. They simply have to be taught to use the stuff. Your advertising is the best medium for the program.

REGARDING ALLOCATION

Some manufacturers, the smaller ones in particular, get the willies when they see the word *allocation* affixed to a material. There is no reason for it. Keep in mind that some of the allocated materials can be obtained by the cosmetic manufacturer. The glycols and isopropyl alcohol are cases in point. Just because the material is on allocation doesn't mean you can't get it. It does mean that you will get a chance to get some of the material from the stockpile, *if* there is enough left over after war uses are satisfied. As a result the amount you may have allocated to you may vary each time you make application for an allocation, because the amount left over varies from month to month depending on military and other essential needs. So, don't be afraid to apply for an allocation. Supposing you get turned down. So what? You are no worse off. But supposing you get all or part of what you ask for, then everything is hotsy-totsy.

CETYL ALCOHOL

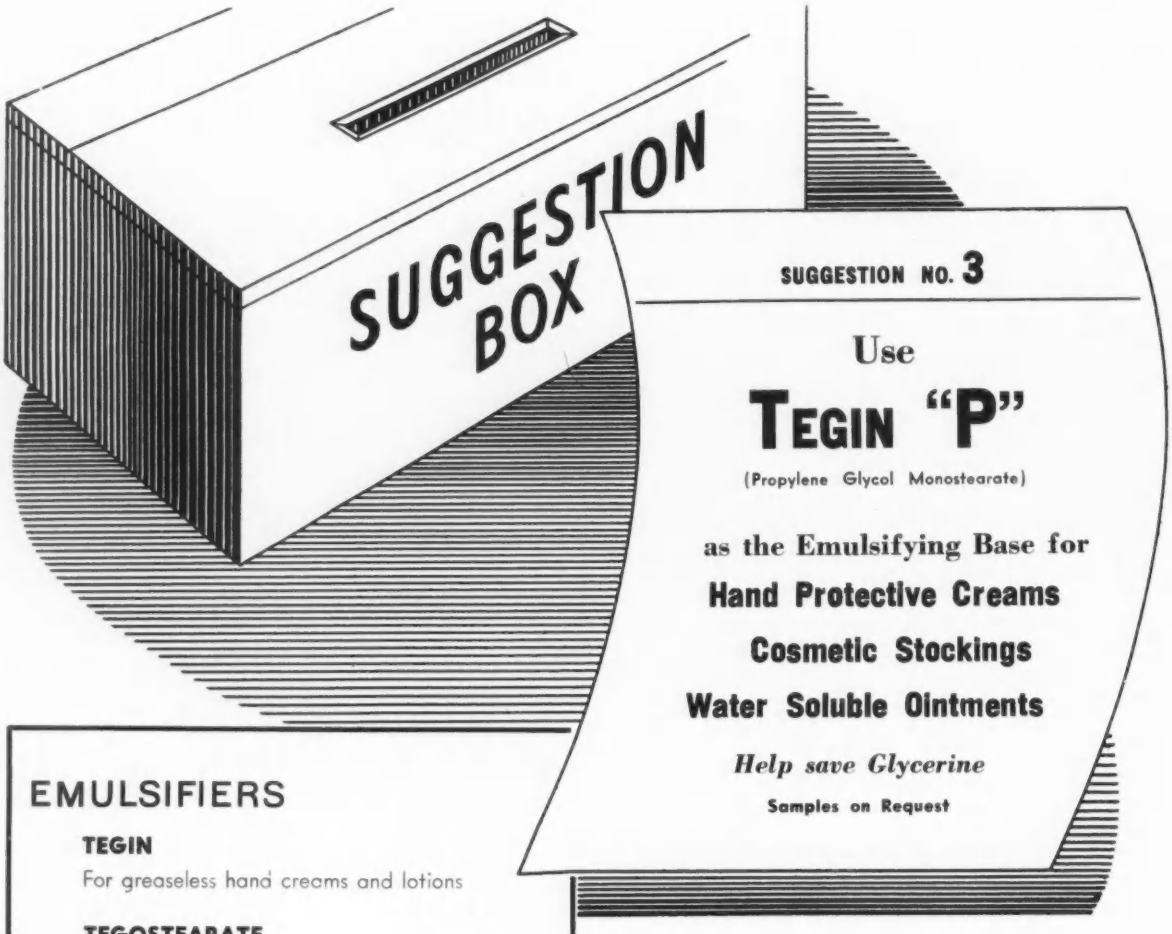
This material is practically unobtainable. The situation had been given some hope earlier, but this has faded away. It now becomes important to make plans to replace cetyl alcohol with something else. In some cases there will be no replacement since the only other thing that would work was stearyl alcohol and that is as difficult to get as cetyl alcohol. But in some products, small additions of absorption bases or lanolin will help. In hand creams and similar preparations, try adding a small amount of mucilage made from an available ingredient but keep in mind that the product will require a preservative. Certain specialties offered in the trade will be of help.

CONCENTRATED SHAMPOO

Shampoo ordinarily runs about 20 to 25 per cent total dry soap in a solution that may contain alcohol or not as the case may be. Shampoo is in use by many people. In line with what was said in another part of this writing, it is worth trying to concentrate the shampoo to where it contains, say, 40 or 50 per cent anhydrous soap. There are some shampoos of this type already on the market to prove the workability of the idea. You could save on a lot of transportation and costs by doing something of this kind. It is worth a trial.

HAND CREAM vs. HAND LOTION

Which gives the consumer the most for the money and takes up the least space, requires the least materials and labor for the utility obtained? It is a moot question—unless someone already has had the foresight to find out. With restrictions under consideration, it is a good point to settle in advance, and then be guided accordingly. There is the matter of closure, one requiring a smaller amount of plastic to make than the other. There is the matter of weight for glass jar as compared with bottle. Then, how many times can



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TEGIN
For greaseless hand creams and lotions

TEGOSTEARATE
For lotions

TEGIN P
For ointments, hand creams and lotions

TEGACID Regular • TEGACID Special
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For ointments, night creams, water-in-oil type

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YOU CAN'T PHOTOGRAPH MORALE

It is an intangible quality in free men that makes a Corregidor...a Wake Island... that keeps the people of Malta still smiling and "thumbs up" on a decimated isle . . . that sends a Chinese stripling to harass a far better equipped foe . . . or that makes the guerrilla bands in the steep recesses of the Jugoslavian mountains and the unyielding defenders of Stalingrad—the terror of the Wehrmacht.

Morale makes for victory, and our industry has a recognized responsibility in the effort. In this war, women play a more important role than ever before, and Britain for one, has become keenly aware of the value of cosmetics.

We must not stay production. When prize formulae are affected by shortages and priorities, we are charged with the finding of suitable substitutes . . . acceptable alternatives.

Many manufacturers, turning to us, as experts in the field of synthetics for more than a quarter of a century, have been able, through us, to secure reproductions of unavailable or price-prohibitive ingredients. Accurate . . . Available, *Florasynthetics* are not secondary replacements, but have long been recognized as *primary* essentials in the successful manufacture of perfume, lotions and other toiletries.

Florasynth **LABORATORIES, INC.**

1533 OLMSTEAD AVE., NEW YORK, N. Y.

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Sizing up

the SHAPE of the FUTURE

With the many new and astounding (as yet unknown) inventions coming as a result of the present war necessities, the shape of things to come can only be approximated at this time.

We can make preparations for one approaching necessity. Our business must live through that hard period of reconstruction and there can be no better insurance for this than to make the products now acceptable to the public *just a little bit better.*

BUSH AROMATICS, INC.

136 Liberty Street New York, N. Y.

you use a given amount of cream as compared to lotion or, putting it another way, how long will four ounces of each last. There are also the ingredients to consider.

EMULSIFIED PERFUMES

Our worthy British contemporary, *Soap, Perfumery & Cosmetics*, takes me to task in the October issue for not including a certain proprietary emulsifiers among the group of useful materials with which emulsified perfumes can be made. I am pleased to reply.

In the first place, the special wax-like emulsifier mentioned by *S. P. C.* is not available in this country, and has not been made for some time. The fatty alcohol sulfates are essentially available for priority use only. The oxidized soya bean oil *S. P. C.* mentions has not been found to be a satisfactory emulsifier for this purpose. It tends to produce emulsions of water-in-oil. What is wanted is an emulsion of oil-in-water—preferably a thin watery emulsion. In this line, even if available, I have not found the fatty alcohol sulfates to be stable emulsifiers. The emulsions cream badly, that is, the kind of emulsion we consider satisfactory for an emulsified perfume. Keep your thumbs up, *S. P. C.!*

MORE CONTROL OF LAB EQUIPMENT

Additional control over the purchase of laboratory equipment was put into effect Dec. 5 by an amendment to Limitation Order L-144. Under it, no purchaser of laboratory equipment will be permitted to acquire an item valued at more than $50 or any quantity of the same item to the value of $50 without securing an authorization for such purchase on Form PD-620. Laboratory equipment includes material, instruments, appliances, devices or parts, tools, etc., including second-hand items.

PETITGRAIN IN PARAGUAY

Recent figures published by the *Foreign Commerce Weekly* on Paraguay's production of oil petitgrain indicate that 1941 represented the peak year for petitgrain Paraguay.

Heavy demand during 1941 boosted Paraguay's output to an all-time high, shipments rising from 164,407 kilograms in 1940 to 199,487 kilograms in 1941. As no petitgrain is used in Paraguay itself, these figures represent production, as well as export.

The bulk of this crop came to the United States, a small percentage of the 1941 production going to Argentina.

The survey concludes that until better methods of collection and distillation can be inaugurated, the 1941 petitgrain yield may be regarded as the peak production which can be achieved.—*Schimmel Briefs.*

QUESTIONS & ANSWERS

423. SHRINKAGE OF WAXES

Q: I am interested in the shrinkage of the various waxes. I would appreciate any data you can give on this matter. Also inform me in what way I could make these determinations. H. G., Ohio.

A: Regarding the shrinkage of waxes, some of the data is supplied by the respective suppliers. Otherwise, you will have to determine it yourself. There is no quick or easy way. A qualitative method using a lipstick or suppositorly mold will indicate if the wax shrinks at all, by the ease with which the solidified wax is removed from the mold. More precise methods can be found among those approved by the American Society of Testing Materials.

424. COLD PERMANENT WAVES

Q: Will you send us a formula for a cold method of permanent waving? W. W., N. Y.

A: All of the methods of cold permanent waving that have been devised to date are patented. One of the solutions most commonly used contains ammonium hydrosulfide. A series of solutions based on derivatives of thioglycollic acid also are available and application for patent has been made, according to the supplier. Probably other thio compounds are useful. However, we have no further information on the subject at the present time.

425. DERMATITIS OINTMENT

Q: What tar substance is the best to use with a vanishing base ointment for dermatitis? The less color it has the better. My tar vanishing cream ointment is used for industrial dermatitis. It contains oil of cade but it is not satisfactory. Also, what is the best form of sulfur to use in a vanishing cream that will not feel gritty when rubbed on to the skin? O. P., Ohio.

A: Your sulfur ointment will have to be made with colloidal sulfur or a very finely powdered sulfur. Under separate cover, we are sending you the name and maker of a concentrated slurry (in water) of colloidal sulfur and of dry colloidal sulfur. A colorless synthetic tar formula appeared in the Practical Pharmacy Edition of the American Pharmaceutical Association Journal in March, 1941. The following is a quotation from this Journal:

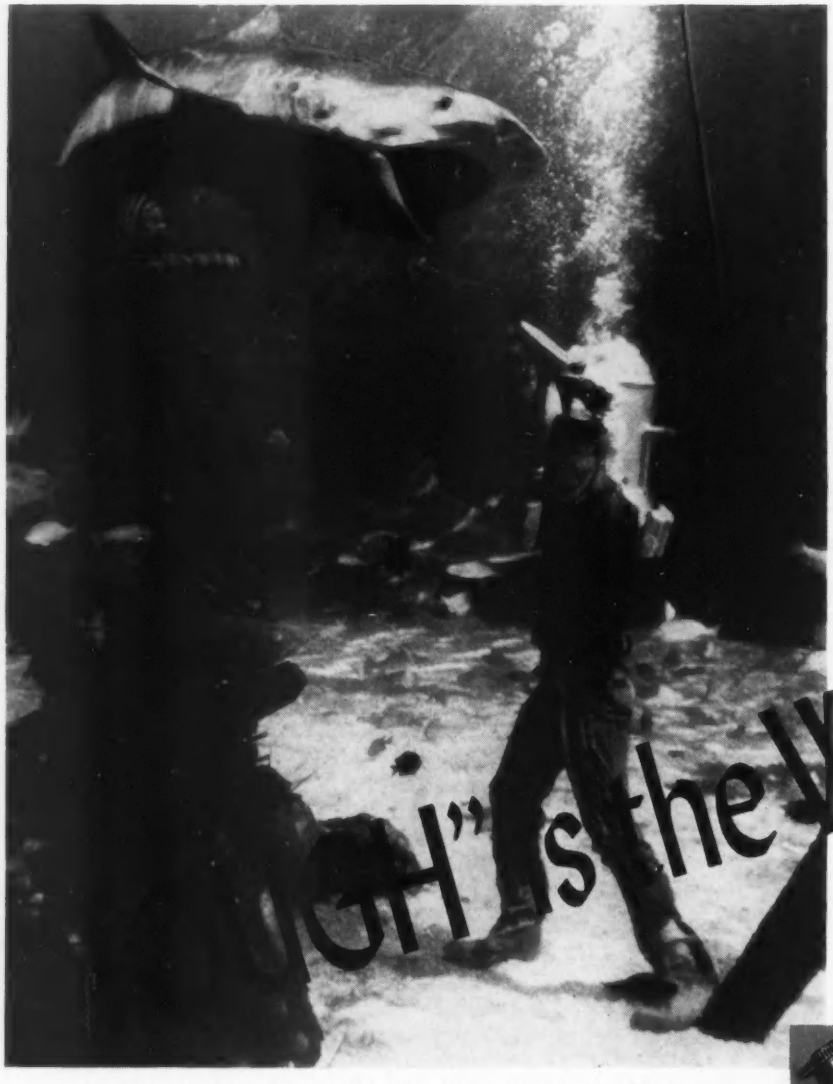
Antracene	1.1 Gm.
Naphthalene	10.9 Gm.
Phenanthrene	4.0 Gm.
Carbazole	2.3 Gm.
Picolene	
Pyridine	
Quinoline, of each..	0.58 cc.
Phenol	0.7 Gm.
Cresol	0.75 cc.
Petrolatum, q.s.	100.00

Mix together the anthracene, naphthalene, phenanthrene, carbazole and phenol; add the picolene, pyridine, quinoline and cresol; triturate and add the melted petrolatum; triturate until congealed. This is the formula of Drs. Guy and Jacob of the University of Pittsburgh, School of Medicine.

426. PREPARING INCENSE

Q: We would like some information on the preparation of incense, such as the materials needed for molding, proper burning and so forth. B. F., Ida.

A: Incense consists of a mixture of charcoal, potassium nitrate, together with essential oils and gums. Charcoal is preferred to aromatic woods because naturally perfumed wood develops empyreumatic odors upon burning, whereas charcoal does not. The powdered materials are mixed together, the essential oils are added and finally an adhesive, such as one of the vegetable gum mucilages, is added and the product is then pressed into molds. Gum resins also aid in forming a mass that can be pressed easily into suitable shapes. Finally, the perfuming of such a mixture is a ticklish job because it is essential that you get volatilization of aromatics and not a burning of them. Accordingly, it is best to buy the perfume material from some recognized house.



A staff diver at Marineland warily watches the gaping mouth of a 12 ft. Tiger Shark. Photo: Marineland Studios, Florida.

Sheffalloy TRADE MARK REGISTERED
SHEFFIELD PROCESS TUBES

BUILT for a "career" of predatory underseas work, a shark is a toughie in anybody's language. Just as the shark is perfectly designed for the tough conditions it has to meet, so must your packages be designed for the "careers" they have ahead of them. Consider the mauling, the twisting and bending, the pressure given a collapsible tube, and you'll want them "tough as a shark" for your products. New England Tubes have long been known as the tubes that can take it. Exclusive processes of melting, mixing and tempering the metals make their toughness *bred in*—an integral, always-there guarantee of super strength. Today when less critical metals are used, it is assuring to our customers to know that our SHEFFALLOY Sheffield-Process Tubes give more protection than their products ever need!

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THE WILCO COMPANY, 6800 McKINLEY AVENUE, LOS ANGELES, CAL.

COMMENT

Why the cosmetic industry may benefit from a re-examination of value

Things may not be as bad as they sometimes seem. It is possible that price ceilings may eventually prove to be a good thing for the trade. All reputable houses will avoid the black market and the net result is likely to be a steadying influence. As shortages in alcohol are felt new developments such as concentrates, cream colognes and better cosmetic stockings will likely find a more secure place for themselves. As lines are restricted they will be more carefully thought out and as a result the trade as a whole will benefit. War not only brings a re-examination of values but the realization of new possibilities and the discovery of new needs. The challenge to the industry in itself is bound to result in much new, creative thinking.

Installment selling in reverse to take up excess purchasing power

Means for taking up excess purchasing power seem to be the concern of numerous government and civilian organizations. Aside from the fact that excess purchasing power is not so evident or as well distributed as many are inclined to believe, and that the higher taxes and purchase of war bonds and stamps are likely to absorb a sizable proportion of any excess the various schemes continue to emanate from fertile minds. One of the more interesting of these schemes is that of Rolf Nugent; and special interest attaches to this plan because there is some official consideration of it. The basic idea of the Nugent plan is installment selling in reverse. That is, the consumer pays now for merchandise he won't get until after the war is over. Collections would be made by telephone and telegraph companies. This was suggested as it was felt that sales finance companies would urge the dealer to buy over his head and then start lending him money to keep up with his installments. As utility companies are disinterested parties they would not be subject to this temptation. The plan has been used for years in selling securities, the dealer withholding stock certificates until fully paid

for by the customer. As a whole, for that purpose it was successful. It might also work very well in certain durable goods lines; but it is doubtful whether the idea could be adapted by the cosmetic and allied trades with any hope of success.

Limiting corporation profits not likely to curb inflation

Comparative charts showing trends in the amount of available consumer goods and the purchasing power in the hands of the public indicate that there is a growing excess of purchasing power over the goods available. This will inevitably result in bidding up the prices of the limited amount of goods available unless checked in some sound way. In the light of these facts it is difficult to agree with Judge Byrnes, economic director, who proposes to check inflation by a further limitation on corporation profits. This might be a wise step if the excess purchasing power was in corporation treasuries; but it is not. It is in the hands of the general public, wage earners, etc. Actually corporation profits are not inflationary. In fact they are likely to be just the reverse because they are so heavily taxed. It may finally be impossible to curb the forces that are producing increases in prices. Certainly it will not be done by further limiting corporate profits.

Incentives to keep women workers interested and active

Numerous plants in the cosmetic industry have already been converted to war work; and for labor they are turning chiefly to women. What proportion of women is employed in the over-all picture? The answer is between 50 and 75 per cent. The concerns report that they find the women more adaptable, more skillful with their fingers but less dependable than men. The answer to the query as to why they appear to be less dependable was summed up by one executive: "Women will work until they've bought whatever merchandise they wanted to go to work for. It may be a bedroom suite, a silver service or a diamond ring." So, if war workers keep at the job better when they are buying expensive items the suggestion is made that they be encouraged to buy quality merchandise, such as fine jewelry for example. Why not let them save against a definite purchase of a specific item? The company would refund the money if the item was not delivered—and it is contended the girls would work like beavers to earn a fine piece of jewelry or a fur coat.

The customer parade is moving faster and faster

The customer parade is now moving at such a terrific pace that manufacturers must intensify their advertising programs to keep up with it, points out Charles L. Eschleman.

The point is well taken. No manufacturer ever advertises to a static audience but to a parade of customers and prospects. Some customers are constantly disappearing and others are coming up so that some of the effectiveness of past educational material ceases while new unknown customers must be educated about any particular manufacturer's products.

In normal times lists change completely in about five years. Under the impetus of war conditions this has been accelerated enormously. Rarely has there been a time when it was more urgent for a manufacturer to keep his name and brands before the moving audience.

Fresh and exhilarating as the flower itself—WARDIA—an entirely synthetic Rose character, is meeting the most exacting demands of discriminating perfumers. Used by itself or as a replacement for the natural Rose oil it is invaluable. A Chuit, Naef product, ample stocks are available in this country—$38.00 per pound—a trial ounce $3.75.

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CHICAGO OFFICE . . . 612 NORTH MICHIGAN AVENUE

NEW ESSENTIAL OILS FROM PUERTO RICO

Properties of Lippia micromeria, Eugenia buxifolia and Pectis elongata . . . All have oils which have not been described previously in literature

by NOEMÍ G. ARRILLAGA

Puerto Rico Experiment Station, United States Dept. of Agriculture, Mayaguez, Puerto Rico

DUE to the cutting off of our normal relations with the Far East, there has resulted a scarcity of essential oils used extensively in the perfume, cosmetic, drug, and allied industries. There is an obvious need of providing a supply of these oils throughout the emergency. Puerto Rico and some of the countries of the Western Hemisphere have suitable climates and soil conditions for the growing of these essential oil crops and may be a future source of supply.

The three plants discussed in this article are found in Puerto Rico and have oils which have not been described previously in the literature.

LIPPIA MICROMERIA

Lippia micromeria var. *helleri* (Britt.) Moldenken, of the family Verbenaceae, known in Puerto Rico as "orégano" or "mejorana," is a shrub about 1 or 2 meters high and is endemic to the dry low and middle elevations of the island.[1] Its slender, pubescent branches bear small, white flowers tinted with purple and curly leaves from 6 to 12 millimeters long, as shown in figure 1, that resemble those of some species of sweet marjoram and have a suave, spicy aroma.

L. micromeria has been used in the island as a condiment and also for medicinal purposes such as in rubbing preparations for colds.

Distillation: Duplicate 7-pound sample leaves and twigs of *L. micromeria* were distilled by two methods. A yield of 0.37 per cent on the fresh basis was obtained by steam distillation and distillation of the plant material immersed in water gave 0.45 per cent.

Effect of drying: In order to observe the effect of drying on the yield of oil from the leaves and twigs of *L. micromeria* duplicate samples were allowed to air-dry under cover for 5 days and were then distilled by the immersion-in-water process. An average yield of 0.51 per cent based on the fresh weight of the samples was obtained, which was slightly higher than that of distillations from the freshly-cut material.

Fig. 1. Young plant of L. micromeria. Oil from the leaves is rich in carvacrol and is similar to origanum, majoram

Physical properties of the oil: The oil obtained from the above distillations had a strong, spicy aroma, was greenish in color, and possessed the following physical properties: specific gravity 0.9411 $\frac{15^\circ\ C.}{15^\circ\ C.}$ at ———, optical rotation +1.3° at 20° C., refractive index n_d 1.5058 at 29°, and solubility in 80 per cent alcohol 1:1.

Chemical analysis of the essential oil: By standard methods of analysis[2] the oil was found to have the following constituents: phenols 52 per cent, aldehydes and ketones none; other properties were: acid number 0, and ester number 7.8. The presence of carvacrol was identified by the

Fig. 2. Branch of Eugenia buxifolia; oil from the leaves is rich in cineol used especially as an antiseptic and somewhat in perfumes. Could be employed further in toiletries

Fig. 3. Spanish citronella, Pectis elongata; the essential oil from this plant resembles oil of lemon grass and consists chiefly of citral. Probably can be used for same purposes

formation of its derivative when the oil was treated with alcoholic potash solution.[3]

According to the foregoing physical and chemical properties, this oil resembles commercial origanum and marjoram oils which are obtained from different species of plants of the family Labiatae and most of which are also rich in phenols.

The physical properties of the oils of origanum and marjoram were compared with oil of *L. micromeria*. All three oils had similar properties with the exception of their solubility in alcohol. The solubility of the *L. micromeria* oil was 1:1 in 80 per cent alcohol, while the solubilities of oils of marjoram and origanum ranged from 1:2 to 1:3 in 80 per cent alcohol. The greater solubility of the oil of *L. helleri* would make it preferable for some purposes to the other two oils.

Application: This oil appears to be suited for use in affording a pleasant aroma to shaving lotions, brilliantines, soaps, and possibly in certain candies and liqueurs.

EUGENIA BUXIFOLIA

Eugenia buxifolia (Sw.) Willd., known in Puerto Rico as "guayabacón," is a small tree, often shrublike, found in the dry southwestern part of the island. It occurs also on Mona, Muertos, and Vieques Islands as well as in St. Croix, St. Thomas, Hispaniola, Jamaica, Cuba, and the Bahamas.[4] The leaves resemble those of bay and, like the latter, have a spicy, minty aroma. This plant, a branch of which is shown in figure 2, belongs to the family Myrtaceae of which bay, clove, eucalyptus, and pimenta are members. The pleasant, clean aroma of the oil obtained from guayabacón leaves seems to be a combination of the bouquet of the oils obtained from these four plants. The country people of Puerto Rico use the leaves for the relief of toothache, earache, and other pains; for this reason the leaves are believed to have some analgesic effect.

Distillation: Steam distillation of the leaves yielded 0.343 per cent on fresh basis.

Physical properties of essential oil: The oil had a pale yellow color, which turned green on standing, and a spicy, minty aroma. The following physical characteristics were observed: specific gravity $\frac{15^\circ \text{ C.}}{15^\circ \text{ C.}}$ 0.9019 and refractive index n_d 1.4629 at 28.2° C.

Chemical analysis of the essential oil: For chemical analysis, samples of the oil were shaken in Cassia flasks with a 50 per cent solution of resorcinol to absorb cineol, with a 5 per cent solution of sodium hydroxide to absorb phenols, and with saturated neutral sodium-sulfite solution to determine aldehydes and ketones. From these tests and the subsequent examination of the separate phenols the composition of the oil was found to be as follows: Cineol 78.5 per cent, phenols 5 per cent, consisting mainly of eugenol which was identified by means of the benzoyl derivative[5] aldehydes and ketones 10 per cent, and possibly a trace of menthol.

Application: The principal constituent of this oil,

cineol is used primarily as an antiseptic but to some extent in perfumes. It is possible that this oil could be used for scenting shaving lotions and other toilet preparations.

PECTIS ELONGATA

Pectis elongata (H. B. K.), known locally as "limoncille del país," is an herbaceous plant of the Carduaceae family, with short green leaves and yellow flowers, as shown in figure 3. The plant grows wild in Puerto Rico. In Haiti[6] it is called "Spanish citronella," and medicinal value is attributed to it. The leaves, when crushed, have a potent lemon aroma, recalling citral and not citronella as its name implies.

Distillation: When a quantity of the leaves and flowers were distilled immersed in water, 0.216 per cent of an essential oil was obtained on the basis of the fresh weight.

Physical properties of the oil: The oil was pale yellow in color and had a strong aroma, resembling lemon grass oil. It had a specific gravity of 0.901 at 15° C.

——— and a refractive index n_d of 1.4805 at 28° 15° C.

C., and was soluble in 2 volumes of 70 per cent alcohol.

Chemical analysis of the oil: By chemical analysis the oil was found to consist chiefly of the aldehyde citral, which on absorption with sodium sulfite showed a yield of 60 per cent. Citral was identified by the melting point of the semicarbazone and of the crystalline derivative formed with cyanoacetic acid.

Application: Since the principal constituent of this oil is citral, it would appear that it could be used for the same purposes as lemon grass oil, such as in hair oils, bath crystals and soaps.

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[3] Ibid. (See p. 257.)

[4] Britton, N. L., and Wilson, Percy. Scientific survey of Puerto Rico and the Virgin Islands. Vol. VI. 663 pp. New York Academy of Sciences, New York. 1925. (See p. 35.)

[5] Parry, Ernest J. The chemistry of essential oils and artificial perfumes. Ed. 4, revised, Vol. 2, 365 pp., illus. London. 1922. (See p. 261.)

[6] Barker, Henry D. et Dardeau William S. Flore d'Haiti. 456 pp. Service Technique du Department de L'Agriculture et de L'Enseignement Professional. Port-au-Prince, Haiti. 1930. (See p. 394.)

Cure for Inflation

RUNAWAY inflation can be as devastating and as productive of human misery as the invasion of a foreign foe. I am convinced that the greatest single deterrent against inflation is PRODUCTION. Production—for civilian needs—I believe is more of a prevention against inflation than any price ceilings which may be established or any tax bill we may pass. If there is sufficient production of civilian needs, those who are drawing war wages will not compete against their neighbors in buying. —*Senator George.*

After the War Blue Print

ENGLAND has two wars on her hands—an external war with the Axis and an internal war, bloodless but nearly as far-reaching, over retention or upheaval of the capitalistic system when the fighting war is over.

A. Wyn Williams describes the activities of the "upheavalists" in the December issue of *Nation's Business*, reporting that "there is a new design for living on the drawing board of England, envisioning a pie on every table and a government thumb in every pie."

One of the principal designers of England's post war plans is Sir William Beveridge, member of a committee designated by Winston Churchill nearly two years ago to "peer into the future" and formulate a government post-war policy. Sir William's views are indicated by his statements that "We cannot trust to the maintenance of employment by the price mechanism," and that "National planning may mean the replacement of competitive private enterprise for profit, by public monopoly not for profit."

Why should we be interested in Britain's post war plans? Because we have a habit of adopting England's social measures. Our government's recognition and encouragement of labor unions, civil service, the dole, and control of industry are among our imports from England.

The Beveridge recommendations to the British government are expected to urge that the British do away with the fundamental motive of the economic system as hereto known in democratic countries—a man's desire to earn an individual income and provide a future for his family, the magazine reports.

Aid for Women Employes

A FAMOUS women's physician, Dr. Mary Halton, has some very interesting comments to make on women in industry. She finds that many women leave home too hurriedly for a sufficient breakfast. Plants which offer a cafeteria service are wise.

She suggests that women eat three equally-sized meals a day, not one skimpy one, one medium and one large meal. In between, she advises fruit juices in quantity, ice cream, buttermilk or salad. Milk should be drunk with the meals.

Frequent rest periods for women bring excellent results. So do sunbaths, which store up energy. Vitamins, especially Vitamin B complex, is unusually helpful to maintaining an even application of energy to a given job.

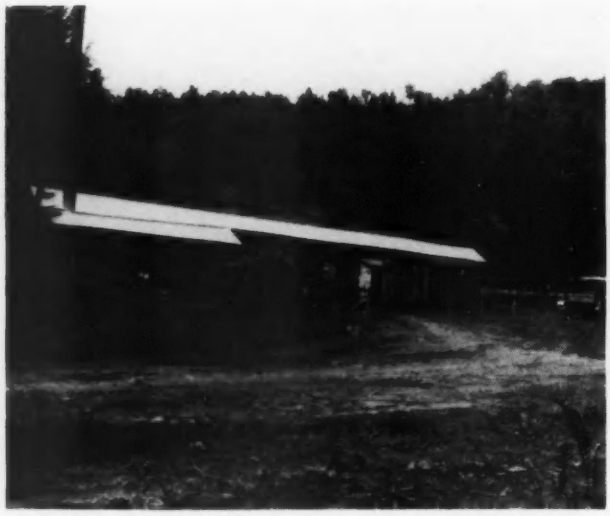
Women physicians can be of great assistance to an employer if they are allowed regular talks with the girls. Periodic disturbances, for example, can be greatly alleviated by drinking of tomato juice, or other alkalines, beforehand. Two days a month rest in bed will do wonders for the nerves of many workers. So will wagons of sandwiches, on whole wheat; ice cream, orange and tomato juice; hot coffee—wheeled around, increase plant efficiency.

A PICTORIAL VISIT TO AN AMERICAN CEDAR LEAF OIL FACTORY

Nestled away in a picturesque setting that might be in northern New York or somewhere in New England there is an American cedar leaf oil factory. . . . A small puff of smoke in the distant foot hills is the first sign the traveler has that he is approaching the distillation plant

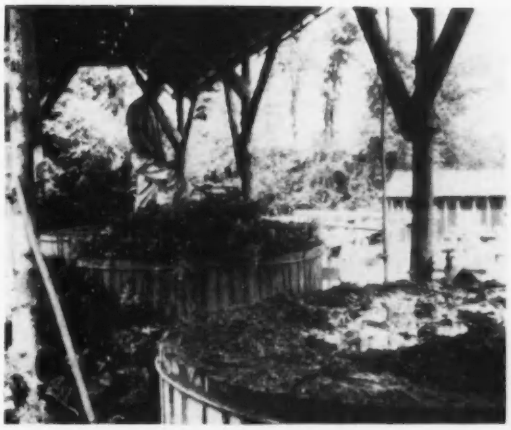
1. Across a railroad track into open woodland, fed by dirt or corduroy roads, leading into the heavy growth of neighboring hills one comes to the plant. Few houses or fences are seen and the place seems uninhabited

2. To keep out grazing cattle and horses a fence is provided. An automatic gate can be opened from a car without the driver leaving his seat, as it is operated by pressing down the stone weight that acts as a counter-balance. The gate closes automatically after a car or truck passes through



3. The stills, boiler house and bunks are under one roof for the convenience of operation in rainy weather or when snow is on the ground. Each still can accommodate a different oil because it has a separate condenser. Sometimes as many as 20 men are employed to cut brush, trim branches, haul and sort the different stock—All photos courtesy of the Sparhawk Co.

4. As cedar leaf, spruce, hemlock, juniper and other evergreens arrive they are stored in separate bins or stalls. This permits the accumulation of "greens" for several weeks ahead. As one still is emptied it is converted to a different oil



5. Three stills working independently make it possible to distill at the same time many different oils. The leaves are picked up by an iron "spider" that lifts heavy bunches of brush, depositing them by an overhead trolley directly into the still. The preparation of a still is important, because maximum yields constitute profits

6. From the stills run condenser pipes in a long flume containing running water. The water is dammed in the hills and comes down by gravity into the condensers through large intake pipes. Each is under control by a large gate-valve. In summer more water is required for this purpose than winter to offset evaporation

7. Separate condensers are maintained for each still with an extra one in case of breakdown. They are all linked together by cross connections. So no matter which still is used, the condenser will yield the same oil, even if the original still is changed to another oil. This makes the different distillations continuous

8. To keep the level of the water always above the condenser pipes, bagging is put at the further end, which is lifted or lowered depending on the amount of water descending from the upper reservoir. In winter when water is plentiful, it is not required. During spring freshets, the water is dammed in a different manner

9. In the receiver room, each pipe containing condensed oil and water goes perpendicularly underground ten feet, then comes up alongside the original to serve as a Florentine flask. The oil that has not descended through the barrier remains on top. Holding the hand under the water outlet forces the oil up into cans

10. After completion of the distillation, the brush is removed again with the same iron hook and transferred to the boiler room. Even in its wet condition it burns with a terrific heat, especially with a little soft coal. A still may be tramped down, packed tightly, but when exposed the contents shrink about one-third

Short Adages

by R. O'MATTICK

PREDICTIONS: Well, here is 1943 already starting to toddle around!! Happy New Year! We asked Dr. Rowmateral whether he cared to make any statement on the outlook and all that. He turned the tables and asked us to do the predicting. We shall. If the predictions materialize we will be bragging about them in 1944, '45 and '46 (if we live that long) reminding our readers (if we have any left) that back in January, 1943, we said thus and so. Should the predictions not turn out, we shall say no more about the matter—after the manner of all well-seasoned commentators and columnists. Here are the predictions—*ipso facto, verbatum et ad valorum:*

1. Before the winter of 1943 Italy will be out of the war but American perfumers will continue using domestic imitation bergamot for years to come.

2. In the Spring things will be so hot in Africa that the Axis will long for a good Russian winter, but Geranium Algerian and other African oils will still be on the way.

3. On the home front, it will be necessary, as before, to fill out allocation and other forms, but no new forms will appear after March 17, 1943. By that time government agencies will run out of ideas on new forms. The shortage on old forms will be so acute that it will be imperative to fill out a form to obtain forms.

4. As time rolls along toward the next Christmas, a bit of relief on alcohol will be in sight.

* * *

Xmas-Gift After-Thoughts: Never look a gift of White-Horse in the mouth. Also, never look a gift of Vermouth in the mouth.

* * *

Biographical Note: We have learned that Martin Van Buren, grandson of the eighth President of the United States, died recently at the age of 86. The press reports that he was unmarried, had never engaged in any business or profession and belonged to no clubs. Contrast this mild life with that of our dear and turbulent friend, Dr. Rowmateral, whose adventures, perfume and otherwise, are recorded from time to time in this column. The Doctor was in two wars, has been married three times, has been active in three businesses, two professions, and is a member of fifteen clubs, lodges, associations, etc.

* * *

Believe-It-Or-Nut: Quite a number of active members of the Liars Club were at Dr. Rowmateral's New Year's Party. The story related by Sand L. Wood was the best documented:

"Before the war, when airplane trips were casual affairs, I often took the American Arrow, Flight 17, at 5 P. M. and got into Chicago in time to go out with a customer. On one of these Flight 17 jaunts I had as a fellow-passenger the distinguished perfumer, Dr. Emil Noselle. We got to talking about odors and he was so enthusiastic about our Clover Perfume Oil Intensonée that the sample bottle fell out of his hands. When we returned by plane to New York, two weeks later, as we were flying over some oil fields in Ohio, all the passengers remarked how fragrant the air was with clover. Emil Noselle and I looked at each other but didn't say a word. We recalled that the sample of perfume oil he dropped on our way to Chicago fell just at the time we were passing these oil fields. The Clover Intensonée must have oozed over the fuselage and the drops of liquid had perfumed the entire countryside for two weeks—mind you. That's what I call a perfume!"

"Did the compound contain any fusel oil?" asked Dr. Rowmateral.

* * *

We are not waiting for the Trade Journals in the Tobacco Industry to tell their readers how the boys in army camps like to receive gifts of Men's Toiletries before we state here and now that the boys in army camps like to receive something to smoke—those of them who smoke—and most do!

* * *

What with Xmas shopping and all that, we found ourselves faced at the end of last month with an acute shortage of paragraphs for the SHORT ADAGES column. With the deadline only a day ahead and Pat Chouli dropping in to chat, we conceived the happy thought of having a guest columnist. We put a sheet of paper, some pencils and a supply of whisky and potash in front of Pat and ran out to do some last minute Xmas shopping. When we returned an hour later, Pat was sound asleep, the whisky bottle was empty and so was the sheet of paper. He woke up, looked at us sheepishly and promised to write an entire column for next month. We are looking for volunteers for March, April, May, June, etc., to the end of the year.

"I'm writing my memoirs, F. W.; I'm calling them 'From Cold Cream to Trench Mortars in 18 Months—with 97 Trips to Our Nation's Capital!' "

BOTANY, ORIGIN and APPLICATION of ESSENTIAL OILS

by DR. ERNEST S. GUENTHER

Chief Research Chemist, Fritzsche Brothers, Inc., New York, N. Y.

A complete list of all important essential oils alphabetically arranged in a simple, concise and convenient way including a complementary list on geographical origin in all parts of the world and embracing newly developed sources in the United States and Latin American countries.

Name of the Oil	Botany	Origin	Application
Almond, Bitter	Obtained from the dried ripe kernels, after elimination of the fixed oil, of *Amygdalus communis* L. or other kernels containing amygdalin, by maceration with water and subsequent steam distillation.	Cultivated in Morocco, Algeria, Spain and lately also in California.	(Official in the USP XII) Recommended in the treatment of certain skin disorders and prescribed instead of small amounts of hydrocyanic acid. An ingredient of certain official preparations and pharmaceuticals. For flavoring purposes the poisonous hydrocyanic acid must be removed.
Angelica Root	Distilled from the dried root of *Archangelica officinalis* Hoffm.	Cultivated in Belgium, Northern France and Germany.	In cordials of the Benedictine and Chartreuse types; in gins; in perfumes.
Angelica Seed	Distilled from the seed of *Archangelica officinalis* Hoffm.	Cultivated in Belgium, Northern France and Germany.	See above.
Anise, Star	Distilled from the star-shaped fruit of *Illicium verum* Hooker f.	Province of Tonkin (French Indo-China) and Province of Kwangsi (Southeastern China).	(Official in the USP XII) An expectorant and medicinal flavoring agent. Recommended in the treatment of colic and as an insecticide. An ingredient in certain official preparations, pharmaceuticals, also in mouthwashes and tooth pastes. As a food flavor in bakery goods, candies, chewing gums, tobacco, alcoholic liqueurs. It is also used in cattle sprays and in perfumes.
Anise, Russian	Distilled from the dried ripe fruit of *Pimpinella anisum* L.	Cultivated primarily in Russia and also in the eastern part of Central Europe.	(Official in the USP XII) See above.
Sweet Basil	Distilled from the flowering tops of *Ocimum basilicum* L.	Cultivated mainly in Southern France.	As a food flavor in condiment mixtures such as catsups, prepared mustards and vinegars. Also in cosmetics and perfumes.

Name of the Oil	Botany	Origin	Application
Bay	Distilled from the leaves of *Pimenta acris* Wight.	Puerto Rico, Dominica, and a few other West Indian islands.	(Official in the NF VII) An active antiseptic recommended in the treatment of skin disorders; an ingredient of certain official preparations, pharmaceuticals, bay rums, and hair tonics. Limited amounts used in food flavors.
Bergamot	Obtained by expression from the rind of the fresh fruit of *Citrus bergamia* Risso.	Cultivated extensively in Calabria (Southern Italy) with Reggio as the center.	(Official in the NF VII) Recommended as an insecticide; an ingredient of certain official preparations, pharmaceuticals; in lotions, hair tonics, toilet waters, colognes, perfumes and soaps.
Bois de Rose Brazilian	Distilled from the fragrant wood of *Aniba rosaeodora* var. *amazonica* Ducke.	In the forests of the lower Amazon Basin.	In soaps and perfumes. For the preparation of linalool which, in turn, is used for the manufacture of esters, primarily linalyl acetate. Both linalool and its esters are much used in artificial flavors, soaps and perfumes.
Cade	Empyreumatic volatile oil obtained from the woody portions of *Juniperus oxycedrus* L.	Chiefly in Spain.	(Official in the USP XII) Recommended in the treatment of various skin diseases; an ingredient of certain official preparations, pharmaceuticals and liniments; also used by veterinarians.
Cajuput	Distilled from the fresh leaves and twigs of several varieties of *Melaleuca leucadendron* L.	Produced on the island of Boeroe in the Dutch East Indies.	For medicinal purposes as an anthelmintic, antiparasitic, expectorant and local stimulant. Recommended in the treatment of scabies, rheumatism, chronic laryngitis and bronchitis; often used in toothache drops; considerable quantities employed for technical preparations.
Camphor	Distilled from the wood of *Cinnamomum camphora* (L.) Nees et Ebermaier.	Produced mainly in Formosa; also in Japan and Southern China.	For the manufacture of isolates and synthetics: 1) Camphor crystal, a USP XII drug used in many official preparations, pharmaceuticals, liniments and inhalants; also employed in the manufacture of celluloid. 2) Safrol, an isolate with the characteristic odor and flavor of sassafras; used in foodstuffs and tobacco as a flavoring agent; the starting material for manufacturing isosafrol and heliotropin, both used as flavors and in perfumery. 3) Fractions of camphor oil, obtained after most of the solid camphor has been frozen out. a) Artificial sassafras fraction—for flavoring soft drinks and tobacco. b) Camphor sassafrassy fraction—for insecticides, fly sprays, soaps and technical preparations. c) Camphor light fraction—for soaps, technical preparations and as a solvent.
Cananga	Distilled from the fresh flowers of a variety of *Cananga odorata* Hook. f. et Thomson.	Provinces of Batan and Cheribon, Java.	In soaps, cosmetics and perfumes, replacing the more expensive ylang ylang oil.
Caraway	Distilled from the dried, ripe seed of *Carum carvi* L.	Widely cultivated in Europe, especially in Holland and Russia.	(Official in the NF VII) An ingredient in certain official preparations and pharmaceuticals; as a food flavor in bakery goods, candies, condiment mixtures, alcoholic liqueurs of the kümmel type; also for the manufacture of carvone.
Cardamom	Distilled from the seed of *Elettaria cardamomum* (L.) Maton.	Cultivated in Ceylon and along the Malabar Coast of Southern India.	(Official in the NF VII) An ingredient in certain official preparations; as a food flavor in condiment mixtures, bakery goods, sausages, etc.

Name of the Oil	Botany	Origin	Application
Carrot Seed	Distilled from the seed of *Daucus carota* L.	Widely cultivated in Europe and America. Seed produced mainly in Southern France.	As a food flavor in condiment mixtures, bakery goods, soups, alcoholic liqueurs; it is also employed in perfumery.
Cassia	Distilled from the leaves and twigs of *Cinnamomum Cassia* (L.) Blume.	In the provinces of Kwangsi and Kwangtung, in Southern China.	(Official in the USP XII) Fungicide and local stimulant; adjuvant in medicinal prescriptions; an ingredient of certain official preparations, pharmaceuticals, tooth pastes, mouthwashes; as a food flavor in candies, chewing gums, soft drinks of the kola type, bakery goods. It is also employed in soaps.
Catnip	Distilled from *Nepeta cataria* L.	Grown in the United States.	Used mainly by trappers as an animal lure for the feline family.
Cedar Leaf	(See Oil of Thuja)		
Cedar Wood	Distilled from the fragrant red core wood of *Juniperus virginiana* L.	Grows widely in the southeastern parts of the United States.	In soaps, a good fixative for various perfume odors. A special grade, oil cedar wood microscopic, is used with immersion lenses. A highly purified, colorless cedar wood oil is also used for clearing.
Celery Seed	Distilled from the seed of *Apium graveolens* L.	Widely cultivated in Europe, the United States and British East India. St. Rémy-en-Provence, Southern France, produces the highest grade of seed.	As a food flavor in soups, sausages, condiment mixtures, bakery goods, celery salt and celery tonics. Small quantities are used in perfumery.
Chamomile German	Distilled from the dried flowers of *Matricaria chamomilla* L.	Cultivated in Germany and particularly in Hungary.	As a flavor in cordials and vermouths. Small amounts used for flavoring infusions and medicines. It is also employed in perfumery.
Chamomile Roman	Distilled from the dried flowers of *Anthemis nobilis* L.	Throughout Western and Southern Europe; cultivated extensively in Belgium.	See above.
Chenopodium	Distilled from *Chenopodium ambrosioides* L., var. *anthelminticum* (L.) A. Gray.	Maryland.	(Official in the USP XII) As an anthelmintic.
Cinnamon	Distilled from the fragrant, dried inner bark of true *Cinnamomum zeylanicum* Nees.	Mainly in Ceylon; also in the Seychelles and Madagascar.	Pharmaceuticals, tooth pastes, mouthwashes; as a food flavor in bakery goods, soft drinks, condiment mixtures, chewing gums; also in perfumes.
Citronella Ceylon	Distilled from the grass *Cymbopogon nardus* Rendle, var. *lenabatu*.	Produced in the southern part of Ceylon.	Extensively employed in soaps and technical preparations; indispensable in insecticides and fly sprays.
Citronella Java	Distilled from the grass of *Cymbopogon Winterianus* Jowitt.	Produced in Java, Guatemala and Formosa.	See above. Also used in the manufacture of isolates and synthetics: 1) Citronellal—an important aromatic used in soaps and perfumes; also in the manufacture of synthetic menthol and hydroxy citronellal. Menthol, an official drug, is much used in liniments, inhalants, mouthwashes, tooth pastes. Hydroxy citronellal is an important ingredient in soaps and perfumes. 2) Geraniol—used in soaps, insect baits, perfumes, artificial flavors and for the manufacture of esters such as geranyl acetate.

Name of the Oil	Botany	Origin	Application
Clove Bud	Distilled from the dried flower buds of *Caryophyllus aromaticus* L.	Grown extensively in Zanzibar and on the east coast of Madagascar.	(Official in the USP XII) Expectorant and efficient germicide; local anesthetic; an ingredient of certain official preparations, pharmaceuticals, tooth pastes, mouthwashes and toothache drops; as a food flavor in candies, chewing gum, bakery goods; in soaps and perfumes of the carnation type; for the isolation of eugenol, an official drug much used by the dental profession. Eugenol, in turn, may be converted into isoeugenol and vanillin. The latter is used in large quantities in bakery goods, extracts, candies and perfumes.
Clove Stems and Clove Leaves	Distilled from the stems and leaves of *Caryophyllus aromaticus* L.	Zanzibar and Madagascar.	Somewhat inferior to clove bud oil; used especially for the isolation of eugenol and manufacture of vanillin.
Coriander	Distilled from the dried ripe fruit of *Coriandrum sativum* L.	Cultivated in Central Europe, especially in the eastern part, in Russia and Hungary.	(Official in the USP XII) Medicinal flavor; an adjuvant; a food flavor in condiments, bakery goods, candies, alcoholic liqueurs such as gins, vermouths.
Cubeb	Distilled from the berries of *Piper cubeba* L.	Grows in Java and other islands of the Dutch East Indies.	Used mostly as a food flavor in condiments and processed foods; small amounts used medicinally and in perfumery.
Cumin	Distilled from the seed of *Cuminum cyminum* L.	Cultivated in the East Indies, Asia Minor and Morocco.	Used primarily as a food flavor in condiments, especially curries; also in soaps and perfumes.
Cypress	Distilled from the leaves of *Cupressus sempervirens* L.	Grown in Southern France.	Medicinally as a remedy for whooping cough. Also in soaps and perfumes.
Dill Weed	Distilled from the whole herb of *Anethum graveolens* L., before the seed has reached maturity.	Grown in Central Europe and the United States.	As a food flavor in processed foods, condiments and particularly for dill pickles.
Dill Seed	Distilled from the dried, ripe seed of *Anethum graveolens* L.	See above.	See above.
Elemi	Distilled from the gum of the elemi tree, *Canarium luzonicum* (Miq.) Gray.	Philippine Islands.	In soaps and technical preparations.
Erigeron	Distilled from the weed of *Erigeron canadensis* L.	Michigan and Indiana.	Medicinally as a hemostatic; a food flavor in condiment mixtures.
Estragon (Tarragon)	Distilled from the herb of *Artemisia dracunculus* L.	Cultivated in Southern France. Recently production has been started in Ohio.	Much used as a flavor for vinegars, sauces, condiment mixtures; small amounts in perfumery.
Eucalyptus	Distilled from the leaves of several *Eucalyptus* species.	Produced in Southern and Southeastern Australia; small amounts in Southern Spain, California, and recently also in Uruguay.	(Official in the USP XII) Very useful in cough drops, mouthwashes, gargles, dental preparations, inhalants, room sprays, medicated soaps; an important disinfectant; an ingredient in certain official preparations. Used in the isolation of: 1) eucalyptol, an official drug; 2) piperitone, which is used in soaps as such and which may be converted into synthetic menthol and thymol; 3) Terpene fractions, such as phellandrene, much used in industrial processes.

Name of the Oil	Botany	Origin	Application
Fennel	Distilled from the dried ripe fruit of *Foeniculum vulgare* Mill.	Cultivated mainly in Central Europe and Russia.	(Official in the USP XII) An ingredient of certain official preparations and pharmaceuticals. Primarily as a food flavor in bakery goods, condiments, and tobacco; small amounts used in soaps.
Geranium	Distilled from *Pelargonium graveolens* Ait.	Cultivated on Réunion Island, Algeria and Southern France.	Used extensively in soaps and perfumes.
Ginger	Distilled from the rhizome of *Zingiber officinale* Roscoe.	Cultivated in Jamaica, on the Malabar Coast, and in West Africa.	Primarily as a food flavor in bakery goods, cakes, ginger snaps, spice snaps; also in soft drinks of the ginger ale type and in condiment mixtures.
Grapefruit	Obtained by expressing the fresh peel of *Citrus decumana* L.	Extensively cultivated in Florida, also in Texas.	Primarily as a food flavor in soft drinks, soft drink powders, gelatin desserts, candies; small amounts used in lotions and colognes.
Guaiac Wood	Distilled from the wood of *Bulnesia Sarmienti* Lor.	In the jungles of Gran Chaco in Paraguay and in Argentina.	Primarily as a modifier and fixative for fine perfumes and for soaps.
Hemlock	Distilled from the needles and twigs of *Abies canadensis* Mchx.	In the United States and Canada.	In insecticides, soaps, bath oils and sprays.
Hops	Distilled from the dried flowers of *Humulus lupulus* L.	Cultivated in Belgium, Northern France, Germany, Czechoslovakia and California.	An important flavor in brewing.
Hyssop	Distilled from the flowering tops of *Hyssopus officinalis* L.	Cultivated in Southern France, Germany and Hungary.	Used medicinally in the form of tinctures; as a flavor in liqueurs.
Juniper	Distilled from the dried ripe fruit of *Juniperus communis* L.	Grows wild in Tuscany, Tyrol, Czechoslovakia, Hungary and Yugoslavia.	(Official in the USP XII) A diuretic ingredient in certain official preparations and pharmaceuticals; much used in compounded gin flavors, in liqueurs and cordials such as sloe gin.
Labdanum	Distilled from the balsamic exudation of *Cistus ladaniferus* L.	Produced in the Mediterranean regions, especially Spain, Southern France, Corsica, Morocco and Greece.	Used primarily in perfumes, cosmetics and soaps.
Laurel Leaf	Distilled from the leaves of the tree *Laurus nobilis* L.	Produced in Dalmatia.	As a food flavor in culinary preparations, condiments and bakery goods.
Lavandin	Distilled from the lavandin plant, a cross between lavender (*Lavandula vera* D.C.) and spike (*Lavandula latifolia* Vill.)	Cultivated in Southern France.	Indispensable in soap work; useful in preparing imitation lavender oils; in perfumes.
Lavender	Distilled from flowering *Lavandula vera* D.C.	Grows wild and is cultivated in Southern France. Cultivation has been started on Puget Sound.	(Official in the USP XII) Used medicinally as a stimulant; an ingredient of certain official preparations; much used in cosmetics, lotions, toilet waters, shaving preparations and soaps. Recommended as an insect repellent.
Lemon	Obtained by pressing the peel of *Citrus medica* L. var. *limonum* (Risso) Hook. f.	California (coldpressed oil) and Sicily (handpressed oil).	(Official in the USP XII) Used as a medicinal flavor; an ingredient of certain official preparations; a very important food flavor in bakery goods, carbonated soft drinks, soft drink powders, gelatin desserts, extracts, candies, ices. Also in perfumes, colognes, lotions and soaps.

Name of the Oil	Botany	Origin	Application
Lemongrass, E. I.	Distilled from the grass, *Cymbopogon flexuosus* Stapf.	Produced on the Malabar Coast, British East India.	A very important oil in soaps, bath salts, sprays and technical preparations; for the isolation of citral which, in turn, is used in artificial lemon flavors and in the manufacture of ionones, important synthetics for artificial flavors and in perfumes and soaps.
Lemongrass, W. I.	Distilled from the grass, *Cymbopogon citratus* Stapf.	Madagascar and Guatemala.	See above.
Limes Expressed	Obtained from the peel of *Citrus medica* L., var. *acida* Brandis by expression.	West Indies (*écuelled* oil), Mexico and Florida (Coldpressed oils).	As a food flavor in carbonated soft drinks, soft drink powders, candies, bakery goods. Small amounts used in colognes and lotions.
Limes Distilled	Distilled from the juice of the crushed fruit of *Citrus medica* L., var. *acida* Brandis.	West Indies and Mexico.	See above.
Linaloe	Distilled from the wood and sometimes from the fruit of several species of the family *Burseraceae* [particularly *Bursera aloexylon* (Schiede) Engl.].	Mexico.	In soaps and perfumes; for the isolation of linalool which, in turn, is used in the manufacture of esters, primarily linalyl acetate; both linalool and its esters much employed in artificial flavors and soaps.
Lovage	Distilled from *Levisticum officinale* Koch.	Cultivated throughout Europe, especially in Southern Germany	As a food flavor in bakery goods, condiments, soups; in soaps, cosmetics and perfumes.
Mace	Distilled from the arillode of the seed of *Myristica fragrans* Houtt.	Cultivated in the Dutch East Indies and on Granada (West Indies).	See Nutmeg.
Mandarin	Pressed from the peel of *Citrus madurensis* Lour.	Sicily, California and Brazil.	As a flavor in carbonated soft drinks, soft drink powders, candies, gelatin desserts; also used in perfumes, eaux de Cologne, and lotions.
Sweet Marjoram	Distilled from the flowering herb of *Origanum majorana* L.	Southern France, North Africa.	As a food flavor in bakery goods, processed foods, meats, sausages, condiments, vinegars, catsups. Small quantities in perfumes and lotions.
Mastic	Distilled from the resinous sap of *Pistacia lentiscus* L.	Islands of Greece.	As a flavor in condiment mixtures and cordials; in perfumery.
Mountain Laurel	Distilled from the leaves of *Umbellularia californica* Nutt.	California and Oregon.	In certain pharmaceuticals.
Mustard	Distilled from the dried, ripe seed of *Brassica nigra* (L.) Koch and other varieties of the *Cruciferae* family.	Cultivated in Russia, the East Indies, North America and Europe.	(Official in the USP XII) A powerful rubefacient; used in counter-irritant preparations and liniments, as a substitute for mustard plasters; an important food flavor in condiment mixtures such as mustard, sauces and catsups.
Myrrh	Distilled from the dried gum of various species of *Commiphora.*	On the shores of the Red Sea, in Arabia and Somaliland.	Medicinally in dental preparations, mouthwashes; in soaps, incense and perfumes.
Myrtle	Distilled from the leaves and twigs of *Myrtus communis* L.	The Mediterranean Basin, especially Algeria, Morocco, Southern France and Corsica.	As a food flavor in sausages, meat sauces. Also in toilet preparations such as eaux de Cologne.

Name of the Oil	Botany	Origin	Application
Neroli	Distilled from the fresh blossoms of *Citrus bigaradia* Risso (*C. aurantium* L.)	Cultivated in Southern France, Sicily, Algeria and Spain; recently also in Haiti.	(Official in the NF VII) Used in certain official preparations; in flavor work; primarily in colognes, perfumes and cosmetics.
Niaouli	Distilled from the leaves of *Melaleuca viridiflora* de Brongn. et Gris.	New Caledonia.	Primarily in medicinal preparations; used like cajuput oil.
Nutmeg	Distilled from the dry kernel seed of *Myristica fragrans* Houtt.	Cultivated in the Dutch East Indies and Granada, West Indies.	(Official in the USP XII) A local stimulant; an ingredient of certain official preparations; much used as flavor in bakery goods, confections, puddings, condiments; also in meats and sausages. Small amounts in perfumes, cosmetics and soaps.
Olibanum	Distilled from the dried exudation of the frankincense tree, *Boswellia carterii* Birdw. and other species of *Boswellia.*	Southeastern Arabia and Somaliland.	In cosmetics, perfumes, soaps and especially incense.
Opopanax	Distilled from the dried exudation of *Commiphora erythraea*, var. *glabrescens* Engle.	Arabia and Somaliland.	Soaps, lotions, perfumes and incense.
Bitter Orange	Obtained from the peel of *Citrus bigaradia* Risso, by expressing.	Produced in the West Indies, Italy and Spain.	(Official in the NF VII) As a food flavor in bakery goods, soft drinks, candies. Also in cosmetics, toilet waters and perfumes.
Sweet Orange	Obtained from the peel of *Citrus aurantium* L., var. *sinensis* Gall.	California (coldpressed), Sicily (handpressed), West Indies (*écuelled*), French Guinea (handpressed), Florida (coldpressed), Spain and Brazil (coldpressed).	(Official in the USP XII) Medicinal flavoring; recommended in the treatment of bronchitis and as a replacement for oil turpentine in certain medicines; an ingredient in certain official preparations, pharmaceuticals; an important food flavor in bakery goods, carbonated soft drinks, soft drink powders, gelatin desserts, candies; in soaps, cosmetics, lotions and perfumes.
Origanum	Distilled from the flowering herb of *Coridothymus capitatus* Reichb. f.	Spain and Morocco.	An antiseptic important in pharmaceutical and dental preparations, mouthwashes; as a food flavor in condiments, sausages; large quantities used in soaps.
Orris Root	Distilled from the dried root of *Iris florentina* L.	Cultivated mainly in Italy; also in Morocco.	As a flavor in soft drinks, candies, gelatin desserts; in soaps, cosmetics, floral perfumes, especially violet.
Palmarosa (Oil of Geranium, East Indian)	Distilled from the grass, *Cymbopogon Martini* Stapf., var. *motia.*	British East India and Java.	In soaps, cosmetics and perfumes; for the preparation of pure geraniol which, in turn, is converted into esters; geraniol and its esters are used in artificial food flavors, soaps and cosmetics.
Parsley Leaf	Distilled from the herb, *Petroselinum sativum* Hoffm.	Cultivated in Europe, particularly France; also in the United States.	An important flavor in processed foods, soups, sausages, condiment mixtures, and catsups.
Parsley Seed	Distilled from the dried, ripe seed of *Petroselinum sativum* Hoffm.	See above.	See above.
Patchouly	Distilled from the dried leaves of *Pogostemon cablin* Benth.	Cultivated in British Malaya and Sumatra.	In soaps and perfumes.
Pennyroyal (European)	Distilled from *Mentha pulegium* L.	Spain and Morocco.	In medicines, but principally in soaps.

Name of the Oil	Botany	Origin	Application
Pennyroyal (American)	Distilled from *Hedeoma pulegioides* (L.) Pers.	United States.	See foregoing.
Pepper	Distilled from the dried, ripe fruit of *Piper nigrum* L.	Dutch East Indies, Southern British East India, Ceylon, French Indo-China and Madagascar.	As a flavor in processed foods, condiments, meats, sausages, sauces and soups.
Peppermint	Distilled from varieties of *Mentha piperita* L.	United States (Michigan, Indiana and Oregon), England (Mitcham), Russia, Bulgaria, Northern Italy and Hungary.	(Official in the USP XII) A stimulant; an ingredient of certain official preparations, pharmaceuticals, mouthwashes, tooth pastes; a very important flavor in candies, chewing gums, jellies, alcoholic liqueurs.
Peppermint, Japanese	Distilled from *Mentha arvensis* D.C., var *piperascens* Holmes.	Japan and adjacent parts of Formosa.	Used primarily for the isolation of menthol, an official drug much used in mouthwashes, inhalants, liniments, tooth pastes.
Petitgrain	Distilled from the leaves of *Citrus bigaradia* Risso.	France, West Indies (Haiti), and Paraguay.	Extensively used in soaps, cosmetics, lotions and perfumes.
Pimenta Berry ("Allspice")	Distilled from the dried ripe fruit of *Pimenta officinalis* Lindley.	Jamaica (B.W.I.)	(Official in the NF VII) An ingredient in certain official preparations and pharmaceuticals; as a flavor in bakery goods, processed foods, condiments, sausages, sauces; in soaps, cosmetics and perfumes.
Pimenta Leaf	Distilled from the leaves of *Pimenta officinalis* Lindley.	See above.	An oil of somewhat inferior quality. Application—see above.
Pine Oils			
Abies Alba	Distilled from the needles and twigs of *Abies alba* Mill.	Tyrol and Yugoslavia.	Much used in insecticides, soaps, bath salts, room sprays, cosmetics, perfumes, inhalants, medicinal and technical preparations.
Templin	Distilled from the cones of *Abies alba* Mill.	Tyrol, Yugoslavia and Switzerland.	See above.
Abies Sibirica	Distilled from the needles and twigs of *Abies sibirica* Ledeb.	Northeastern Russia.	See above.
Pinus Pumilio	Distilled from the needles and twigs of *Pinus pumilio* Haenke.	Tyrol, Northern Italy and Yugoslavia.	(Official in the USP XII) See above; used medicinally as an expectorant; recommended for the treatment of rheumatism.
Pinus Sylvestris	Distilled from the needles and twigs of *Pinus sylvestris* L.	Tyrol, Northern Italy, Scandinavia and Russia.	See above.
Rose	Distilled from the fresh flowers of *Rosa damascena* Mill., and, to a lesser extent, *Rosa alba* L.	Mainly Bulgaria; also Turkey.	(Official in the USP XII) Little used medicinally; primarily for high-grade perfume work, cosmetics, toilet waters, perfumes; a food flavor in confections; much used for the flavoring of tobacco, particularly chewing tobacco.
Rosemary	Distilled from the flowering tops of *Rosmarinus officinalis* L.	Spain, Dalmatia and Tunisia.	(Official in the USP XII) Adjuvant in medicinal prescriptions; an ingredient in certain official preparations and pharmaceuticals; much used in soaps and technical preparations.
Rue	Distilled from the herb, *Ruta graveolens* L.	Spain, Morocco and Algeria.	As a flavor in condiments, sausages, sauces; for the isolation of methyl nonyl ketone.
Sage Clary	Distilled from the flowering herb, *Salvia sclarea* L.	Southern France and Hungary.	In perfumes, toilet waters, cosmetics and high grade soaps.
Sage Dalmatian	Distilled from the leaves of *Salvia officinalis* L.	Dalmatia.	A very important food flavor, especially in sausages, meats, condiments, sauces, etc.

Name of the Oil	Botany	Origin	Application
Sandalwood	Distilled from the heart wood of *Santalum album* L.	Mysore and Coorg (British East India).	(Official in the NF VII) Important medicinal oil recommended for the treatment of gonorrhea; an ingredient in certain official preparations, pharmaceuticals; used also in soaps, cosmetics, perfumes and incense.
Sassafras	Distilled from the root of *Sassafras albidum* (Nuttall) Nees.	Eastern United States, particularly Ohio and Kentucky (Appalachian range).	(Official in the USP XII) An antiseptic and disinfectant; used in medicinal and dental preparations; an ingredient of certain official preparations, pharmaceuticals; as a flavor in soft drinks of the root beer type, candies; large amounts used in soaps, soap powders and technical preparations.
Savin	Distilled from the leaves and twigs of *Juniperus sabina* L.	Tyrol.	Used almost exclusively in medicinal and veterinary preparations.
Savory	Distilled from the herb of *Satureia hortensis* L., also *Satureia montana.*	Central and Southern Europe.	As a flavor in processed foods, condiments, sausages, meats and catsups.
Snakeroot	Distilled from the dried root of *Asarum canadense* L.	Canada and the United States.	An aromatic adjuvant to tonic mixtures and infusions.
Spearmint	Distilled from *Mentha spicata* L.	Indiana and Michigan.	(Official in the USP XII) An ingredient of certain official preparations and pharmaceuticals, mouthwashes, tooth pastes; as a food flavor in candies and chewing gums.
Spike Lavender	Distilled from *Lavandula latifolia* Vill.	Spain.	Mainly in soaps, also in cosmetics.
Spruce	Distilled from the twigs and needles of *Abies canadensis* Mchx.	Canada and the United States.	See Pine Oils.
Sweet Birch	Distilled from the twigs of *Betula lenta* L.	Pennsylvania and North Carolina.	(Official in the USP XII) An ingredient of certain official preparations and pharmaceuticals; liniments, mouthwashes, tooth pastes. A flavor for chewing gums, candies and soft drinks of the root beer type.
Tansy	Distilled from *Tanacetum vulgare* L.	Cultivated in Michigan and Indiana.	In certain medicinal preparations; small amounts also in food flavors.
Tea Tree	Distilled from the leaves of *Melaleuca alternifolia* Cheel.	Australia.	A powerful antiseptic in therapeutic and dental preparations.
Thuja	Distilled from the leaves and twigs of *Thuja occidentalis* L.	Northern New York State and Vermont	This oil is now official in the USP XII, replacing lavender oil which is difficult to obtain. For various official preparations, see Pine Oils. Also used for the scenting of various technical preparations, shoe polishes, for instance.
Thyme	Distilled from *Thymus vulgaris* L.	Spain and Morocco.	(Official in the NF VII) A powerful germicide and antiseptic; much used in dental preparations, inhalants, sprays, lotions; as a flavor in processed foods, condiments, sausages, meats and sauces; an important oil in soaps.
Turpentine	Distilled from the oleoresin obtained from *Pinus palustris* Mill. and other species of *Pinus.*	Southeastern United States and Europe.	(Official in the USP XII) Local irritant, expectorant, diuretic; an ingredient of certain official preparations and pharmaceuticals; in insecticides; an important solvent for the paint industry; starting material for the manufacture of synthetic camphor, an official drug, and of terpineol and its esters which are used in perfume and flavor work.

Name of the Oil	Botany	Origin	Application
Valerian	Distilled from the dried root of *Valeriana officinalis* L.	Cultivated in Belgium, France and Germany. A different variety is raised in Japan, British East India and several South American countries.	An important flavor oil in tobacco. Used also in medicinal preparations as a sedative.
Vetiver	Distilled from the dried root of *Vetiveria zizanioides* Stapf.	Java and Réunion Island, and small amounts also from Louisiana, South America and the West Indies.	In perfumes, cosmetics and soaps.
Wintergreen	Distilled from the evergreen *Gaultheria procumbens* L.	Eastern United States (Michigan, Pennsylvania, North Carolina and New England states).	(Official in the USP XII) See Sweet Birch.
Wormwood	Distilled from *Artemisia absinthium* L.	France and the United States (Indiana and Michigan).	Primarily in alcoholic beverages of the vermouth type and in cordials; also in pharmaceutical preparations.
Ylang Ylang	Distilled from the flowers of a variety of *Cananga odorata* Hook. f. et Thomson.	Cultivated in Madagascar, the Comoro Islands, Réunion Islands and the Philippines.	Used in soaps, cosmetics and perfumes.

BALSAMS

Name	Botany	Origin	Application
Copaiba	An exudation of the South American species of *Copaiba*.	Lower Amazon Basin (Brazil).	(Official in the NF VII) Stimulant, diuretic, laxative; recommended for the treatment of catarrhs and gonorrhea; an ingredient of certain official preparations and pharmaceuticals. It is also used in perfumery, mainly for soaps.
Peru	An exudation of *Myroxylon Pereirae* (Royle) Klotzsch.	Salvador (Central America).	(Official in the USP XII) An expectorant; recommended in the treatment of asthma, chronic bronchitis; as a stimulating dressing for ulcers, local tuberculosis of the skin and wounds; in soaps and cosmetics, an excellent fixative for perfumes.
Styrax American	An exudation of *Liquidambar styraciflua* L.	Honduras (Central America).	(Official in the USP XII) An expectorant; recommended in the treatment of scabies, and dysentery. In tobacco flavors; also in soaps and cosmetics.
Styrax Asiatic	An exudation of *Liquidambar orientalis* Mill.	Anatolia (Turkey).	(Official in the USP XII) See above.
Tolu	An exudation of *Myroxylon balsamum* (L.) Harms.	Colombia (South America).	(Official in the USP XII) As an expectorant, an ingredient in certain official preparations and pharmaceuticals, particularly cough mixtures; in soaps, cosmetics and perfumes.

GEOGRAPHICAL ORIGIN—ESSENTIAL OILS

Origin	Produce	Botanical Source
EUROPE		
Spain	Oil of Spike Lavender	*Lavandula latifolia* Vill.
	Oil of Pennyroyal	*Mentha pulegium* L.
	Oil of Rosemary	*Rosmarinus officinalis* L.
	Oil of Thyme	*Thymus vulgaris* L.
	Oil of Origanum	*Coridothymus capitatus* Reichb. f.
	Oil of Labdanum	*Cistus ladaniferus* L.
	Oil of Cade	*Juniperus oxycedrus* L.
	Oil of Myrtle	*Myrtus communis* L.
Southern France	Oil of Lavender	*Lavandula vera* D.C.
	Oil of Marjoram, Sweet	*Origanum majorana* L.
	Oil of Clary Sage	*Salvia sclarea* L.
	Oil of Carrot Seed	*Daucus carota* L.
	Oil of Celery Seed	*Apium graveolens* L.
	Oil of Hyssop	*Hyssopus officinalis* L.
	Oil of Parsley Seed and Leaves	*Petroselinum sativum* Hoffm.
	Oil of Estragon (Tarragon)	*Artemisia dracunculus* L.
	Oil of Cypress	*Cupressus sempervirens* L.
	Oil of Sweet Basil	*Ocimum basilicum* L.
	Oil of Myrtle	*Myrtus communis* L.
	Oil of Neroli Bigarade	*Citrus bigaradia* Risso.
	Oil of Petitgrain Bigarade	*Citrus bigaradia* Risso.
	Orange Flower Water	*Citrus bigaradia* Risso.
	Oil of Lavandin	A cross between lavender (*Lavandula vera* D.C.) and spike (*Lavandula latifolia* Vill.).
	Oil of Labdanum	*Cistus ladaniferus* L.
	Oil of Savory	*Satureia hortensis* L.
	A great variety of floral oils, such as: Jasmine	*Jasminum grandiflorum* L.
	Rose	A variety of *Rosa centifolia* L.
	Orange Blossom	*Citrus bigaradia* Risso.
	Cassie, Ancienne	*Acacia farnesiana* Willd.
	Cassie, Romaine	*Acacia cavenia* Hook. et Arn.
	Mimosa	*Acacia dealbata* Lk.
	Violet	*Viola odorata* L.
Belgium	Hops	*Humulus lupulus* L.
	Valerian Root	*Valeriana officinalis* L.
	Angelica Root	*Archangelica officinalis* Hoffm.
	Angelica Seed	*Archangelica officinalis* Hoffm.
	Chamomile Roman	*Anthemis nobilis* L.
Holland	Oil of Caraway	*Carum carvi* L.
Germany	Oil of Lovage	*Levisticum officinale* Koch.
Tyrol	A great variety of pine needle oils	*Abies alba* Mill. *Pinus sylvestris* L. *Pinus picea* L. *Pinus pumilio* Haenke. *Pinus cembra* L.
	Oil of Savin	*Juniperus sabina* L.
	Oil of Juniper	*Juniperus communis* L.
England	Oil of Peppermint	Several varieties of *Mentha piperita* L.
Northern Italy	Orris Root	*Iris florentina* L.
	Juniper Berries	*Juniperus communis* L.
Southern Italy and Sicily	Oil of Bergamot	*Citrus bergamia* Risso.
	Oil of Lemon	*Citrus medica* L., var. *limonum* (Risso) Hook, f.

Origin	Produce	Botanical Source
EUROPE		
Southern Italy and Sicily (Continued)	Oil of Sweet Orange	*Citrus aurantium* L. var. *sinensis* Gall.
	Oil of Mandarin	*Citrus madurensis* Lour.
	Oil of Neroli Bigarade	*Citrus bigaradia* Risso.
	Jasmine Flower Oil	*Jasminum grandiflorum* L.
Greece	Oil of Mastic	*Pistacia lentiscus* L.
Czechoslovakia	Hops	*Humulus lupulus* L.
	Fennel Seed	*Foeniculum vulgare* Mill.
Yugoslavia (Dalmatia)	Oil of Juniper	*Juniperus communis* L.
	Oil of Sage	*Salvia officinalis* L.
	Oil of Laurel Leaf	*Laurus nobilis* L.
Hungary	Oil of Dill Seed	*Anethum graveolens* L.
	Oil of Dill Weed	*Anethum graveolens* L.
	Oil of Chamomile German	*Matricaria chamomilla* L.
	Oil of Coriander	*Coriandrum sativum* L.
Bulgaria	Oil of Rose	*Rosa damascena* Mill.
	Oil of Peppermint	A variety of *Mentha piperita* L.
Russia		
European Russia	Oil of Geranium	*Pelargonium graveolens* Ait.
	Oil of Coriander	*Coriandrum sativum* L.
	Oil of Anise, Russian	*Pimpinella anisum* L.
	Oil of Caraway	*Carum carvi* L.
	Oil of Peppermint	A variety of *Mentha piperita* L.
	Oil of Clary Sage	*Salvia sclarea* L.
	Mustard	*Brassica nigra* (L.) Koch.
Siberia	Oil of Pine Needle	*Abies sibirica* Ledeb.
NORTH AFRICA		
Morocco	Oil of Pennyroyal	*Mentha pulegium* L.
	Oil of Thyme	*Thymus vulgaris* L.
	Labdanum	*Cistus ladaniferus* L.
	Oil of Origanum	Varieties of *Coridothymus capitatus* Reichb. f.
	Oil of Myrtle	*Myrtus communis* L.
	Oil of Rue	*Ruta graveolens* L.
	Oil of Almond, Bitter	*Amygdalus communis* L.
	Cumin Seed	*Cuminum cyminum* L.
Algeria	Oil of Geranium	*Pelargonium graveolens* Ait.
	Oil of Neroli Bigarade	*Citrus bigaradia* Risso.
Egypt	Certain flower oils, such as: Jasmine.	*Jasminum grandiflorum* L.
	Cassie, Ancienne	*Acacia farnesiana* Willd.
WEST AFRICA		
French Guinea	Oil of Sweet Orange	*Citrus aurantium* L. var. *sinensis* Gall.
Sierra Leone	Ginger Root	*Zingiber officinale* Roscoe.
	Capsicum	*Capsicum frutescens* L.
EAST AFRICA		
Zanzibar	Clove Buds	*Caryophyllus aromaticus* L.
	Oil of Clove Stems	*Caryophyllus aromaticus* L.
Madagascar	Clove Buds	*Caryophyllus aromaticus* L.
	Oil of Clove Stems	*Caryophyllus aromaticus* L.
	Oil of Clove Leaves	*Caryophyllus aromaticus* L.
	Oil of Ylang Ylang	A variety of *Cananga odorata* Hook. f. et Thomson.
	Vanilla Beans	*Vanilla planifolia* And.
	Oil of Lemongrass, West Indian Type	*Cymbopogon citratus* Stapf.
Comoro Islands	Vanilla Beans	*Vanilla planifolia* And.
	Oil of Ylang Ylang	A variety of *Cananga odorata* Hook. f. et Thomson.
Seychelles Islands	Oil of Cinnamon Leaves	*Cinnamomum zeylanicum* Nees.

Origin	Produce	Botanical Source
EAST AFRICA (Continued)		
Reunion Island	Oil of Geranium	*Pelargonium graveolens* Ait.
	Oil of Ylang Ylang	A variety of *Cananga odorata* Hook. f. et Thomson.
	Vanilla Beans	*Vanilla planifolia* And.
	Oil of Vetiver	*Vetiveria zizanioides* Stapf.
ASIA		
Turkey	Oil of Rose	*Rosa damascena* Mill.
	Styrax Asiatic	*Liquidamber orientalis* Mill.
Arabia and Somaliland	Gum Myrrh	Certain species of *Commiphora* (fam. *Burseraceae*)
	Gum Olibanum	Certain species of *Boswellia* (fam. *Burseraceae*)
	Gum Opopanax	A species of *Commiphora* (fam. *Burseraceae*)
Palestine	Oil of Origanum	A variety of *Coridothymus capitatus* Reichb. f.
	Oil of Sweet Orange	*Citrus aurantium* L. var. *sinensis* Gall.
British East India		
Central Part	Oil of Palmarosa	*Cymbopogon Martini* Stapf var. *motia*
	Mustard Seed	*Brassica nigra* (L.) Koch
Southern Part	Oil of Sandalwood	*Santalum album* L.
	Oil of Lemongrass	*Cymbopogon flexuosus* Stapf
	Ginger Root	*Zingiber officinale* Roscoe
	Cardamom Seed	*Elettaria cardamomum* (L.) Maton
	Pepper	*Piper nigrum* L.
Ceylon	Oil of Citronella	*Cymbopogon nardus* Rendle, var. *lenabatu*
	Cinnamon	*Cinnamomum zeylanicum* Nees
	Oil of Cinnamon Leaves	*Cinnamomum zeylanicum* Nees
British Malaya and Sumatra	Oil of Patchouly	*Pogostemon cablin* Benth.
	Pepper	*Piper nigrum* L.
Java	Oil of Cananga	A variety of *Cananga odorata* Hook. f. et Thomson
	Oil of Vetiver	*Vetiveria zizanioides* Stapf
	Oil of Citronella	*Cymbopogon Winterianus* Jowitt
	Mace and Nutmeg	*Myristica fragrans* Houtt.
	Cubeb Berries	*Piper cubeba* L.
Boeroe	Oil of Cajuput	*Melaleuca leucadendron* L.
Moluccas	Many spices, such as:	
	Nutmeg and Mace	*Myristica fragrans* Houtt.
	Cinnamon	*Cinnamomum zeylanicum* Nees
	Clove	*Caryophyllus aromaticus* L.
	Cubeb Berries	*Piper cubeba* L.
	and others	
French Indo-China	Oil of Star Anise	*Illicium verum* Hooker f.
	Gum Benzoin Siam	*Styrax tonkinensis* (Pierre) Craib et Hartwich, and other species
Southern China	Oil of Cassia	*Cinnamomum Cassia* (L.) Blume
	Oil of Star Anise	*Illicium verum* Hooker f.
Japan Proper, Formosa, and adjacent parts of China	Oil of Camphor	*Cinnamomum camphora* (L.) Nees et Ebermaier
	Oil of Peppermint	*Mentha arvensis* D.C., var. *piperascens* Holmes
	Menthol	Isolated from Peppermint Oil

Origin	Produce	Botanical Source
ASIA (Continued)		
Philippine Islands	Oil of Ylang Ylang	A variety of *Cananga odorata* Hook. f. et Thomson
	Gum Elemi	*Canarium luzonicum* (Miq.) Gray
AUSTRALIA	Oil of Eucalyptus	Various species of *Eucalyptus* (fam. *Myrtaceae*)
	Oil of Tea Tree	*Melaleuca alternifolia* Cheel
	Oil of Sandalwood, Australian Type	*Fusanus spicatus* R. Br.
NEW CALEDONIA	Oil of Niaouli	*Melaleuca viridiflora* de Brongn. et Gris.
NORTH AMERICA		
United States		
California	Oil of Sweet Orange	*Citrus aurantium* L. var. *sinensis* Gall.
	Oil of Lemon	*Citrus medica* L. var. *limonum* (Risso) Hook. f.
	Oil of Mountain Laurel	*Umbellularia californica* Nutt.
Oregon	Oil of Peppermint	*Mentha piperita* L.
	Oil of Mountain Laurel	*Umbellularia californica* Nutt.
Washington	Oil of Lavender	*Lavandula vera* D.C.
Middle West		
Michigan and Indiana	Oil of Peppermint	*Mentha piperita* L.
	Oil of Spearmint	*Mentha spicata* L.
	Oil of Wormwood	*Artemisia absinthium* L.
	Oil of Tansy	*Tanacetum vulgare* L.
	Oil of Erigeron	*Erigeron canadensis* L.
	Oil of Catnip	*Nepeta cataria* L.
Ohio	Oil of Dill Weed	*Anethum graveolens* L.
	Oil of Estragon	*Artemisia dracunculus* L.
	Oil of Savory	*Satureia hortensis* L.
	Oil of Parsley	*Petroselinum sativum* Hoffm.
Northern Part of the East Coast	Oil of Spruce	*Abies canadensis* Mchx.
Northern New York State and Vermont	Oil of Hemlock	*Abies canadensis* Mchx.
	Oil of Thuja (Oil of Cedar Leaf)	*Thuja occidentalis* L.
Pennsylvania	Oil of Sweet Birch	*Betula lenta* L.
	Oil of Wintergreen	*Gaultheria procumbens* L.
Central Part of the East Coast		
Maryland	Oil of Chenopodium (Oil of Wormseed)	*Chenopodium ambrosioides* L., var. *anthelminticum* Gray
North Carolina	Oil of Sweet Birch	*Betula lenta* L.
Southern Part of the East Coast		
Appalachian Range	Oil of Sassafras	*Sassafras albidum* (Nuttall) Nées
East Coast from Virginia to Northern Alabama	Oil of Cedar Wood	*Juniperus virginiana* L.
	Oil of Pennyroyal American	*Hedeoma pulegioides* (L.) Pers.
The great pine forests of the Southern States	Oil of Turpentine	*Pinus palustris* Mill. and other species of *Pinus*
Kentucky	Oil of Snakeroot	*Asarum canadense* L.
Florida and Texas	Oil of Grapefruit	*Citrus decumana* L.
	Oil of Sweet Orange	*Citrus aurantium* L., var. *sinensis* Gall.
Mexico	Oil of Linaloe	*Bursera aloexylon* (Schiede) Engl. and other species of *Bursera* (fam. *Burseraceae*)
	Oil of Limes	*Citrus medica* L., var. *acida* Brandis
	Vanilla Beans	*Vanilla planifolia* And.

Origin	Produce	Botanical Source
NORTH AMERICA (Continued)		
West Indies		
Jamaica	Oil of Limes	*Citrus medica* L., var. *acida* Brandis
	Oil of Sweet Orange	*Citrus aurantium* L., var. *sinensis* Gall.
	Oil of Bitter Orange	*Citrus bigaradia* Risso
	Pimenta Berries (Allspice)	*Pimenta officinalis* Lindley
	Oil of Pimenta Leaves	*Pimenta officinalis* Lindley
Haiti and the Dominican Republic	Oil of Neroli Bigarade	*Citrus bigaradia* Risso
	Oil of Petitgrain Bigarade	*Citrus bigaradia* Risso
	Oil of Bitter Orange	*Citrus bigaradia* Risso
	Preparations are being made to produce:	
	Oil of Lemongrass	*Cymbopogon citratus* Stapf
	Ginger Root	*Zingiber officinale* Roscoe
	Vetiver Root	*Vetiveria zizanioides* Stapf
Puerto Rico	Oil of Sweet Orange	*Citrus aurantium* L., var. *sinensis* Gall.
	Oil of Bitter Orange	*Citrus bigaradia* Risso
	Oil of Bay Leaves	*Pimenta acris* Wight
Dominica, St. Lucia, Tobago, and Trinidad	Oil of Limes	*Citrus medica* L., var. *acida* Brandis
Granada	Mace and Nutmeg	*Myristica fragrans* Houtt.
British Guiana	Oil of Limes	*Citrus medica* L., var. *acida* Brandis
French Guiana	Oil of Bois de Rose	*Aniba rosaeodora* Ducke
CENTRAL AMERICA		
Guatemala	Oil of Citronella	*Cymbopogon Winterianus* Jowitt
	Oil of Lemongrass	*Cymbopogon citratus* Stapf
Salvador	Balsam Peru	*Myroxylon Pereirae* (Royle) Klotzsch
Honduras	Styrax American	*Liquidambar styraciflua* L.
SOUTH AMERICA		
Brazil		
Northern Brazil (Amazon Basin)	Oil of Bois de Rose	*Aniba rosaeodora* var. *amazonica* Ducke
	Balsam Copaiba	Various species of *Copaiba* (fam. *Leguminosae*)
Southern Brazil	Oil of Sweet Orange	*Citrus aurantium* L., var. *sinensis* Gall.
Paraguay	Oil of Petitgrain	A variety of *Citrus bigaradia* Risso
	Oil of Guaiac Wood	*Bulnesia Sarmienti* Lor.
Uruguay	Oil of Eucalyptus	A species of *Eucalyptus* (fam. *Myrtaceae*)
Argentina	Production of several citrus oils has been started.	
Chile	A start has been made to produce aromatic herbs and to distill their oils.	

REPLACING AMMONIA IN HAIR WAVING

How any ammonium salt can be used if necessary and available . . . Making ammonium carbonate from ammonium chloride and ammonium sulfate with sodium or potassium carbonate

by MAISON G. DENAVARRE

AMMONIA water and ammonium carbonate no longer may be purchased for use in permanent waving preparations, according to an order promulgated some time ago but which was amended to allow the sale and use of such ammonia products until the beginning of 1943.

Manufacturers of permanent waving preparations are finding themselves hard pressed for supplies, because the available material during the latter part of 1942 was only part of the amount usually employed. As a result, WPB has advised people to use ammonium sulfate instead of the carbonate. We assume ammonium sulfate will be available.

DIFFICULTIES OF USING AMMONIUM SULFATE

Ammonium sulfate CANNOT be used instead of ammonia water or ammonium carbonate because it does not break down into ammonia or have available any free ammonia. Unfortunately the advice should have been supplemented by describing how ammonium sulfate can be used. Not only ammonium sulfate but any other ammonium salt such as the chloride or nitrate CAN be used if need be or if available. *But they have to be used in conjunction with some strong alkali such as sodium or potassium hydroxide or carbonate.*

When ammonium sulfate, for example, is mixed with an equivalent or excessive amount of either sodium or potassium carbonate, it breaks up in solution to produce ammonium carbonate as one of the products of inter-reaction and sodium or potassium sulfate. Since ammonium carbonate is not stable but breaks down into ammonia and carbon dioxide, the reaction probably can be forced to go pretty much to completion, especially with heat.

REACTIONS FOR MAKING AMMONIUM CARBONATE

The following are word statements of reactions that can be used in making ammonium carbonate from ammonium chloride and ammonium sulfate, with sodium or potassium carbonate:

a. 53.5 parts ammonium chloride plus 106.2 parts sodium carbonate, yield 96 parts of ammonium carbonate plus some sodium chloride:

b. 132.14 parts ammonium sulfate plus 106.2 parts sodium carbonate, yield 96 parts ammonium carbonate and some sodium sulfate;

c. 107 parts ammonium chloride plus 138.2 parts potassium carbonate, yield 96 parts ammonium carbonate plus some potassium chloride;

d. 132.14 parts ammonium sulfate plus 138.2 parts potassium carbonate, yield 96 parts ammonium carbonate and some potassium sulfate.

Reducing this to simpler language, the following ratios and mixtures will produce one ounce ammonium carbonate:

a. 1.1 ounces ammonium chloride plus 1.1 ounces sodium carbonate.
b. 1.4 ounces ammonium sulfate plus 1.5 ounces potassium carbonate.
c. 1.5 ounces potassium carbonate plus 1.1 ounces ammonium chloride.
d. 1.4 ounces ammonium sulfate plus 1.1 ounces sodium carbonate.

Of course, there will be produced either potassium sulfate, potassium chloride, sodium sulfate or sodium chloride as by-products of reaction and in proportion to the amount of other salts used. These will be left on the hair as a deposit but, inasmuch as the hair is washed after waving anyway, this will not be objectionable.

EMULSIONS TEND TO BE LESS STABLE

However, the presence of the extra amount of electrolyte in the solution undoubtedly will tend to make emulsions less stable, and this point must be watched.

It is unwise to use either sodium or potassium hydroxides in permanent waving solutions, except in very small amounts, because of their high irritating properties. Therefore, if your previous solution was based on ammonium hydroxide (strong ammonia water 28 per cent), it is better to convert it to ammonium carbonate, and to use the appropriate amount of the reagents mentioned above.

As a practical example, let us assume that your solution was formerly made according to the following formula:

Sodium sulfite	3.5 ounces
Ammonium carbonate	6.5 ounces
Water, oil, emulsifier qs 128 ounces (1 gallon)	

To adjust your formula with *(Continued on p. 85)*

THE GOSSIPING GUIDE TO THE NEWS

Wartime shortages bring concentrates, sachets, aids to industrial workers . . . Simpler packages, double use containers are signs of the times . . . Enlarging field for soaps and floral colognes

by RAYMOND W. LYMAN

TRENDS, seen a few months back, are pronounced; simpler packaging, hunts for substitutes, extra service to the new war-worker, worries over taxes and questionnaires. But a swing through the industry impresses any reporter with the way the

A toast to purchasing agents who steadily find substitutes!

purchasing agents deal with problems as they arise. So hats off in a rousing New Year's toast to the men who keep their products rolling!

PLASTICS BECOMING SCARCE

Even cellulose acetate is now going almost 100% into war work. Stocks on hand are still available, however, although colors are not procurable in the former wide range we are used to seeing. Many months' supply is in stock but manufacturers turn increasingly to wood as no one is certain how soon the war needs will gobble up the stock on hand.

Considerable trade in the use of plastic scrapings and re-used plastics is reported. This is another case of ingenuity under stress. Ordinarily this would be a waste of time, money and effort but, today, painful thrift is the difference between staying in or going out of business.

DOUBLE PURPOSE PACKAGES

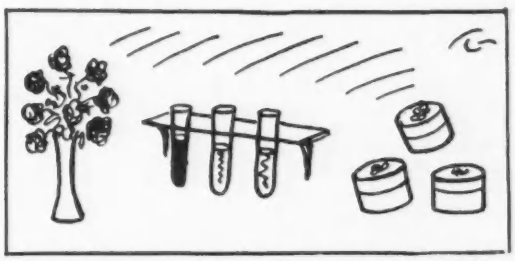
Research in plastics is going forward at such a pace that I've seen another handful of fascinating plastics since I last reported on the subject. I've also seen cosmetic containers of all kinds the designers are working on; we're going to have more beautiful things about us, the moment the war is over, than we've ever had. A great deal of work in the double-purpose package is going on quietly. One house, for example, will market a plastic drinking glass filled with talcum. It has a sifter top which slips off after the talcum is used.

TREND TOWARD SACHETS

Mrs. Robinson, of Mary Chess, Inc., pioneered in the use of American herbs and essences. Today she keeps an eagle eye on the development of the market here but fears it will be four or five years before labor will be plentiful enough to help cultivate a large flower acreage. Temporarily, supplies of essential oils are sufficient to take care of the fine perfumes. Strategy—such a fine name for all sorts of promotional tie-ins—will continue in Spring promotion. And the sachets, whose vogue she started, will bring new customers as alcohol shortages loom. The exquisite concentrates, which the Continent adores, were made some years ago and marketed in minute quantities. Spring may see a revival of these as well as renewed interest in great-grandmother's herbal secrets.

MAY OFFER CONCENTRATES

War is nothing new. The female of the species has always managed to remain feminine and attractive even under the stress of war. Deodorants plus



Concentrates are one solution to current alcohol problem

sachets, heavier-scented dusting powders and concentrates will be the order of the day. O.P.A. right now is fussing over the possibility of all the houses issuing concentrates—a new product and all that—but the big-wigs will be wise to okay these. In the old days this reporter always brought pocketfuls of concentrates for presents when returning from France. And these charming floral fragrances were always more fervently appreciated than anything else I bought. So, from experience, I say to the

cosmetic houses—turn on the steam with O.P.A., if necessary, for women will appreciate a small box of concentrate far more than clouds of powder.

HOW TO SELL CONCENTRATES

One executive objected that they were used to slathering on quantities of cologne and toilet waters. But once they had to pay for a little dab of concentrate, they'd be careful of it and apply with the forefinger lightly behind each ear, a touch at the throat and each wrist. Heavens, does O.P.A. think the dear ladies want to reek of perfume? A little education at the counters and in ads is all that is necessary.

TRAVELING CASES

The Skyliner Bag of Jacqueline Cochran's was a natural development for a pilot who has to pack a lot in a small space. These and similar compact kits have come into their own, as we predicted, at the defense plants. Busy executives and defense

Traveling is out but cosmetic kits are a boon to war workers

workers find the kits invaluable for removing dangerous abrasives. Skin care receives much attention from personnel heads these days and the girls are particularly interested in an all-purpose face cream, the Cochran research workers find. Consequently, a good demand has developed for the sizable jar of their Chromablend. (This highlights what one hears so often these days—the shopper today wants a buy for her money. Quality plus quantity gives the industry quite an order to shoot at.)

THE PACKAGING DILEMMA

Everyone is dizzy right now wondering what they're going to be asked to do without. Cardboard containers are replacing metal quite satisfactorily. Personally, I feel that O.P.A. will do much better to try and concentrate on how more colored inks can be available to pretty-up things, than to harp on ultra-plain containers. Although we pointed out the Spartan plainness of the simple English cardboard containers which they had come to some months ago, I feel strongly that a little color and design is essential to the spirit. If the bureaucrats apply a little of the "get-things-done-somehow" attitude which business displays, the public will be a lot happier months from now. We've plenty of roots of herbs for color. We've plenty of savvy on old-time handicrafts. Let's dig out these skilled people and make them available for brightening the lives of the public instead of setting our sights on a vision of scarcity. Trying to reduce this bountiful land to the rigid economies necessary in not-so-favored Axis lands is absurd. Particularly when we're wasting manpower and overlooking skills. Our old-timers always got there somehow. Today's purchasing agents and traffic managers are their modern equivalents. All I can suggest is that the old handicrafts be used, too.

FLOWER SCENTS TO BOOST FLOWER SALES

At Constance Spry's I noticed a suggestion of several months ago being tried out with success. Small bottles of a floral bouquet accompany a nosegay, leaving behind a delightful memory of the escort and the evening. These people note that the men in picking a fragrance invariably select a true floral scent. Romance seems to thrive on old-fashioned memories of a sweet summer garden of quaint flowers. So the florists incline to sweet, clingy odors and veer away from the heavy musks on the oriental side. This would indicate that the defense workers are doing a double-quick from the assertive side to the feminine.

SPECIAL CREAM PROMOTION

In tune with the times, Charles of the Ritz turns attention to special creams and a powder special while celebrating the birth of Richard Edward and hoping Mr. Salomon can get home and see the new baby. They miss him sorely but the entire staff is concentrating on delivering a fine job while he's in officers' training school at Camp Crowder, Missouri, where the Signal Corps trains its candidates.

SIMPLER GLASS BOTTLES

Simpler glass bottles as predicted replacing fancy glass and metal. Only difficulty is in closures: much work being done in trying to keep ahead of coming shortages and each substitute is a monument to the stick-to-it-iveness of the businessman.

The new Parfums Schiaparelli promotions center around the ½ ounce sizes. Women today are being very careful of their money and are not buying the large sizes and letting them deteriorate or spill. Mr. Leube feels the economy, now being taught at every cosmetic counter, is a good thing for the industry as it saves much precious essence for the future. He also feels that women enjoy more odors when they buy several small sizes and wear the fragrances to suit their moods. The new small bottles will eventually lead to a perfume library, and a much wider use of perfumes is in the offing. Intelligent advertising and promotion will do their part in helping women enhance their personalities with perfume, according to the mood, rather than sticking exclusively to one odor until tired of it.

WIDENING FIELD FOR SOAP

Here is a field certainly coming into its own. Soaps in every scent and hue, amusingly molded. And the defense worker needs soaps as never before to keep dainty. Personnel heads fuss about the new workers going sloppy after a week or so on the job. Here is a fertile field for good cosmetic promotion, then. Begin with small folders on soap, a tie-in

powder, a deodorant, tissues and a good basic cream for face, neck and hands. Don't forget foot care, either. These new workers must be comfortable or they won't be neat. Work with the personnel heads where possible. Talk to the girls themselves. Be practical, not theoretical.

FINDING WHAT WOMEN WANT

Miss Dorothy Nichols of Primrose House is always an inspiration for the practical person. She stays out in the field, behind the counter for weeks at a time. When she comes back into the home office, it's always with sound knowledge. What the women want, what price they want to pay for what

Women today are looking for real dollar value in bargains

they buy and how they want it to last. Today's shoppers want dollar value beyond anything they've ever demanded before, she finds. And they're stocking up on bargains just the same as ever. But heavier-scented bases are necessary to cover the new perspiration odors so many are unaccustomed to having. Fresh lavendar and cologne scents are invigorating to the plant worker for freshening during working hours. Garden scents for off-duty hours, to go with gay colors and rest the mind. She urges a pot of geraniums and some pretty herb such as sweet basil for the worker's kitchen to refresh the eye. And gardens about the factories, too. The mind and spirit must be doubly refreshed during war-time.

FARM AND ARMY CONFLICTS

Every trade reports many scarcities but the farmers are worrying over insecticides. John Powell and Co. note impending shortages in pyretheum and rotenone for general crops. Peas, beans and cattle will get enough but nicotine and arsenical derivatives must replace other uses. Many farmers dislike the arsenicals as produce needs so much washing after those sprays are used and carelessness in the kitchen produces many health problems. Much educational work will have to be done with housewives, Mr. Wickard predicts. The Army will get 80% of the rotenone this year so the civilians will have to use less satisfactory substitutes. Dr. Haudé is sure that many fine new substitutes will be available by next year—but they can't be produced this.

Recent occurrences have caused superstitious persons to regret that there were only thirteen original states and to wish that there had been a fourteenth one—Common Sense.—*Howard S. Neiman.*

Tax Collection

THE Revenue Act for 1942 simplifies the method computing and collecting the tax on retail items of cosmetics sold by the beauty shop. This new act does not require the shop to pay in advance a portion of the tax to the jobber, and the balance when it is collected from the buyer or consumer. The shop collects the tax from consumer at the time of sale, and makes a monthly return of the whole collection rather than the previous method of paying part to the jobber, and the balance to the government. This will eliminate bookkeeping and make it much simpler for the beauty shop to make out the necessary returns.—*Beauty Culture*

Leg Make-up

ACCORDING to a survey by Fawcett Women's Group, leg make-up is being used by 3 per cent of women regularly and by 27 per cent occasionally. Liquid types of leg make-up are far preferred over cake, cream or stick make-up. Miner's, Arden, Kathryn Davis and Rubinstein are the preferred brands. Ease of application, natural appearance and lasting qualities are regarded as the more important factors in choosing leg make-up. Most women leave it on for a day, removing it with soap and water. The principal objections to leg make-up are streaked, spotted appearance and time taken in applying and removing it.

Prepared for Post War

THE UNITED STATES will not be as unprepared for peace at the close of the present war as it was in 1918, Charles E. Merriam, University of Chicago professor and vice-chairman of the National Resources Planning Board, reports.

"We are not going to send our boys in the armed services home to sell apples, nor will our army of war workers be walking the streets looking for a job," he commented.

He outlined the main objectives of the nation's postwar planning as:

1. Full employment of the 30,000,000 workers returning from war production to peacetime occupations.

2. Maintenance of the national income at $100,000,000,000 or more a year.

3. Preservation of the 40-hour week and present wage standards for labor.

4. Release of employed youth, the aged and such women as desire it, leaving them free to return to school or to the home.

"We may look forward," he says, "to broad zones of industrial development in the postwar period. The present emergency has revealed unexpected possibilities in the form of new uses for natural resources and new types of inventiveness and skills." He admits that technological unemployment will pose a disturbing problem, but suggested that this could be met by the government.

Packaging Portfolio

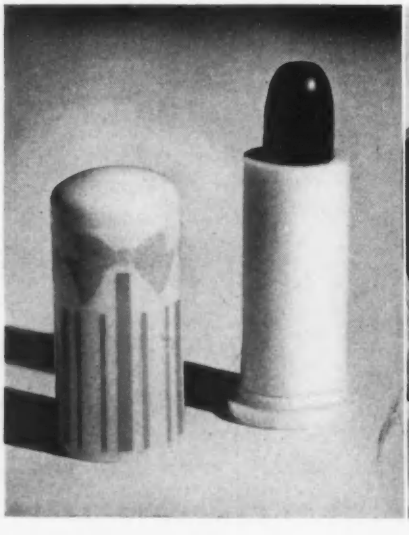
VAD CORP.: Cod liver oil, either 25 or 50 per cent, is the basis for two new creams and lipstick. One cream is for cleansing or night use, the other is for oily skins.

MILKMAID: A new tinted foundation and special cleansing cream appear in this line. The foundation is offered in two shades. Both come in flower-sprinkled containers.

BEAUTY COUNSELORS: Slender blue columns and pink bows decorate the new Super Jumbo plastic lipstick.

LENTHERIC: New items in the Soft Focus line are launched in a new shade, Wonderful, in a make-up box.

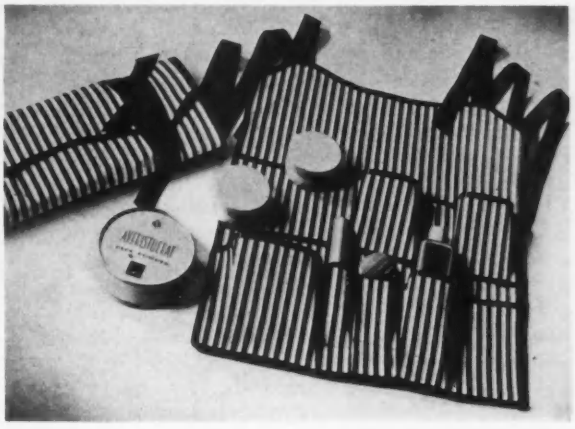
BABANI: Elusive cologne now joins the recently presented perfume. The script name is stencilled in gold.



SCHIAPARELLI: Shocking pink heart-shaped soap, one large and three small cakes, are presented in a heart-shaped package. Golden labels are used on the soap.

SOLON PALMER: A shaving soap stick in wood jacket, a shaker box of talc and a bottle of after-shave lotion, in a slide-open case, comprise Ascot air travel kit.

LES PARFUMS COROT: Spectacle is a new perfume with a matching toilet water. A pastel ceramic medallion, in bird design, decorates the outer package of the perfume.



HARRIET HUBBARD AYER: The V-Kit, an envelop of denim, becomes a practical apron to tie around one's waist while the six cleansing and make-up aids are utilized.

CAMPANA: Solitair cake make-up, six shades and two sizes, contains lanolin. It is packed in an opal glass base with a specially water-proofed cardboard cover.

TONE: Cream-deep cologne, containing no alcohol, is a combination of cologne, lotion and cream, and is designed for many uses. It comes in the Dahlia fragrance.

THE PRODUCTION OF OIL OF LIMES

Manufacturing of lime juice and distilled lime oil usually go together . . . Two types of lime juice . . . One is exported and the other used for distilling lime oil in West Indies

by DR. ERNEST GUENTHER
Chief Research Chemist, Fritzsche Brothers, Inc., New York, N. Y.

AS SUGGESTED, only a very small part of the surplus fruit is worked up into coldpressed oil, while the bulk is processed for lime juice and distilled lime oil, manufacture of these two products usually going hand in hand. It is possible to use for this purpose fruit which previously had been submitted to coldpressing but, as mentioned, such fruit gives a lower quality of juice and an inferior yield of distilled oil. In order to obtain richly flavored juice of highest quality, only sound, fresh limes must be employed.

The surplus fruit arriving from the packing houses is worked up immediately in the processing plants. Any delay causes deterioration of the fruit with resulting inferior quality of juice and lower yield of oil. Damaged or rotting limes must be eliminated. The sound fruit is washed either by floating in a water tank or by spraying with a hose.

TWO SETS OF ROLLERS USED IN CRUSHING

The fruit is then crushed in a mill equipped with two sets of heavy rollers. In most cases these mills are the old type sugar cane crushers used in bygone days. One set of rollers is constructed of iron, the other of stone (granite), the latter giving a finer lime juice for edible purposes. Each set consists of three heavy cylinders, the two lower ones rotating in the same direction, the upper one in the opposite direction. The first cylinder is provided with fine grooves and runs on fixed bearings. The distance between the cylinders is kept as small as possible; during operation it is about one-eighth of an inch. The iron cylinders turn about eight times a minute, while the smaller stone cylinders turn faster. The latter are 24 by 12 inches in size and require 3½ H.P., while the larger ones, 32 by 12 inches or 36 by 16 inches, require 5 H.P. and 7½ H.P., respectively. Power is supplied by old-fashioned water wheels or steam; more recently motors have been employed. Beneath each set of cylinders is a wooden box into which juice, pulp and pits drop. Waste peel ejected at the end of the mill is either fermented and used as cattle feed or simply discarded. The juice, pulp and pits run from the wooden box into a system of strainers made of brass or copper wire. The first sieve is about 3/16 inch mesh, the second ⅛ inch mesh. Rotary strainers are even more effective. They consist of fine mesh, cylindrical copper sieves supported and strengthened by a surrounding perforated copper sheet. A revolving axle with attached brushes passes through the sieve, keeping it clean and pushing the refuse toward the end of the cylinder where it is ejected.

NEW TYPE OF FRUIT CRUSHER

To replace the above described, old-fashioned sugar cane mill, a novel type of fruit crusher has been introduced. It is small, light weight, efficient and relatively inexpensive. If heavy production should require it, several apparatus can be installed, each coupled with a 5 H.P. motor. This apparatus is known as Fruit Press "Sep-Ro-Siv" made by the Enterprise Manufacturing Co. of Philadelphia. The washed fruit is fed into the hopper and from there to a screw press, a tapering worm, the recessed part of which continuously diminishes. Thus, a tremendous pressure is exerted on whatever material is fed into this machine. It is very similar to the food grinders of household use, except that the ordinary food grinder is surrounded by a solid casting, while

Crushing limes in Trinidad, British West Indies. Mills used generally are the old type sugar cane crushers comprised of two sets of heavy rollers, three cylinders each

STILL THE FINEST!

Lilas Surfine has, for many years, been recognized as an outstanding perfume—the most perfect reproduction of the Lilac note.

Compare it with any other fine Lilac flower oil. Then you will understand why it is being used in so many quality perfume and cosmetic lines today.

Fortunately, Lilas Surfine is as readily available and as economical as in the past because it is based on American-made materials. By all means try it in your own perfume or cosmetic line without delay. We are sure it will pre-eminently meet your most exacting requirements.

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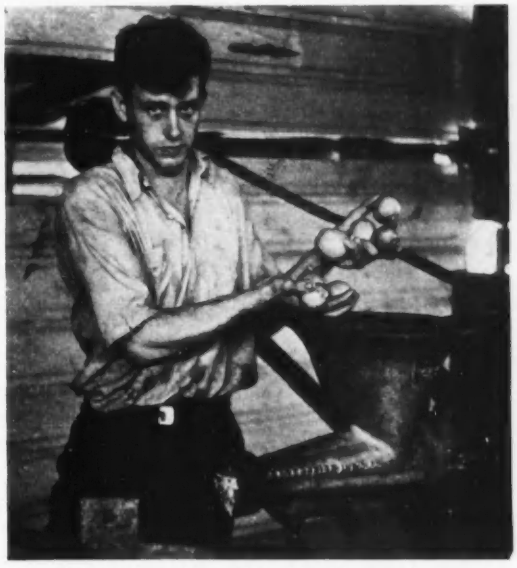

Recently introduced for crushing limes is a small press similar to a household food grinder. Pulp emerges through the nozzle and can be discarded, while juice runs through a slit-like opening and is exported or used for distilling lime oil

the "Sep-Ro-Siv" embodies a perforated casting through which liquids are extruded and solid material passed on. Thus, the crushed waste peel is finally ejected, while juice and light pulp run off through slits in the casing beneath the screw press. The pressure in the apparatus can be adjusted according to condition of the fruit. The waste peel is practically free of oil; if necessary, it can be run through the press again. The juice and pulp flowing from the perforations are strained through metal sieves because thick juice when distilled releases the essential oil more slowly than strained juice. Thin juice, furthermore, gives less difficulty during the process of precipitating calcium citrate. If necessary, the heavy pulp is treated with warm water while being strained to wash out the essential oil.

YIELD OF JUICE

The yield of juice varies according to condition of the fruit; fruit grown in humid districts and during the rainy season contains more moisture than fruit raised in a dry atmosphere. On the average, a 160-pound barrel of limes yields about 7½ gallons of juice or about 62 per cent of the total weight of the fruit.

With lower pressure in the mill, a finer quality of juice, more suitable for edible purposes, is obtained. It is important to adjust the cylinders properly because under ordinary conditions the amount of juice left in 100 pounds of pressed skins varies from 1.8 to 4.3 gallons. Tempany and Weil[9] calculated that one barrel of limes yields about 80 pounds of skins. These authors assume that even with very efficient crushing there is an unavoidable loss of 1½ to 1 2/3 gallons, sometimes even 2 gallons, of juice per barrel of fruit. Imperfect adjustment of the cylinders may be responsible for a loss of one gallon of juice per barrel of fruit or about 12 to 14 per cent of the output. In some instances the ejected lime peel is squeezed in presses similar to the well known cider presses, in order to recover any remaining juice and oil.

The mills must be kept very clean because impurities would cause fermentation and loss of acid in the following batch of lime juice.

STORING THE JUICE

The juice flowing from the iron rollers is immediately and without further preparation used for distilling oil, while the higher quality of juice running from the stone rollers is pumped into large wooden tanks and stored until ready for export. The storage time is usually one month but may be shortened, if necessary, to a minimum of sixteen days; it permits the heavier muck to settle at the bottom while the fine, light pulp rises to the surface. The high acidity and low sugar content of the juice retards fermentation. It is also claimed that the fine film of essential oil forming on the surface of the juice protects it from bacteria in the air, but this contention is doubtful.

After sixteen to thirty days of storing and settling, the intermediary layer of juice is quite clear and can be drawn off through a wooden cock attached to the storage tank. After filtration (simple straining through cloth), the clear juice is filled into wooden casks and protected from fermentation by the addition of SO_2 (350 parts to one million parts of juice) or by sodium benzoate (1/10 of 1%). The choice of preserving agent depends upon the import regulations of the countries to which the juice is shipped.

The wooden casks are made impermeable by pouring in heated wax and then rolling them. Afterwards, they are filled with water and kept standing for a few days to check any leakage.

EXPORT OF JUICE

There exist two types of juice:

1. The clear juice, prepared as described above, is called "settled" or "racked" juice. It should be clear and sparkling, of typical rich lime flavor and a certain acidity. Fresh lime juice contains about 12½ to 14 ounces of citric acid per gallon with variations as high as 10 to 16 ounces. Rainfall and moisture-retaining soil have marked influence upon the acid content, juice of highest acidity being produced from limes grown during the dry season and on well drained soils. G. A. Jones,[10] records that large fruit usually yields a juice of lower acidity. It is quite possible that abundant moisture results in larger fruits and, therefore, the two causes are inter-related. It also seems that fruit grown on older trees yields juice of higher acidity that that grown on young ones.

The "settled" or "racked" juice is sold in wooden casks, so-called "hogsheads" of 50 to 100 imperial gallons. The main countries of export are Great Britain, the United States and Canada.

2. The juice containing light, fine pulp and essential oil floating as a thin film on the surface. This is the *complete* juice of the lime, without the heavy muck

[9] "Lime Cultivation in the West Indies," Pamphlet #72, Imperial Department of Agriculture for the West Indies. Issued by the Commissioner of Agriculture, 1913.

[10] *Ibid.*

SUBSTITUTES FOR NATURAL FLORAL ESSENCES

The growing scarcity of natural floral essences emphasizes the value of high quality substitutes

THE international situation is serving to emphasize the fact that there are countless places where synthetic floral essences can replace the natural floral products with a great deal of satisfaction and marked success.

The ingenuity of American chemists is demonstrated by the fact that American made creations not only reproduce the fragrance of the living flowers with marked fidelity and that they may be employed with complete success but that they are also *preferred* in many instances because of the uniformity in quality which they assure to say nothing of the economies they make possible.

If you find difficulty in obtaining any natural floral product write to us for a substitute. All we ask is that you give it a trial.

NORDA Essential Oil and Chemical Co., Inc.

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ST. PAUL: 253 E. 4th STREET
LOS ANGELES: 2800 E. 11th STREET
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settling on the bottom of the storage tanks. It is known in the trade as "top juice with pulp and oil" and is also exported in hogsheads of 50 to 100 imperial gallons and shipped mainly to Great Britain, the United States and Canada. Small quantities of this juice are used by essential oil houses in England for distilling lime oil. Most of it, however, is employed in the West Indies for distilling lime oil, as we shall see later.

One barrel of limes yields about ten gallons of "top juice with pulp and oil" and only six gallons of clear "settled" or "racked" juice.

According to the definition of the West Indian Limes Association, agreed upon at the First Annual General Meeting in Trinidad, April, 1941:

a. "Top pulp juice" shall be taken to mean the entire juice of the fruit, containing oil.

b. "Clear, clarified, filtered, racked or settled juice," shall be juice free of oil.

KEEPING QUALITIES OF LIME JUICE

The high acidity and content of essential oil doubtless enhance the keeping quality of lime juice, and preservatives are added only to make certain that the juice withstands the long transport abroad. Even without preservatives, lime juice keeps well for quite some time, provided it has been manufactured under favorable conditions and stored in clean, sound casks.

Juice derived from unsound fruit is apt to deteriorate rapidly, even though properly stored. Such juice, employed only for making calcium citrate, must be used as quickly as possible or it will lose a considerable amount of its acid content. Deterioration is caused by moulds and aerobic ferments.

CONCENTRATED LIME JUICE

In order to reduce the cost of freight, lime juice is sometimes concentrated to contain at least 64 ounces of citric acid per gallon. The process of concentrating usually brings about loss of acid by burning. This reduction may be as high as 10 per cent with direct fire heating but is only 2 per cent in evaporation vats quipped with steam coils.

(To be continued)

How Much Do You Pay?

HOW MUCH do you pay? This is one of the questions asked by lots of applicants for factory jobs during their appointment interviews at the Allen B. Wrisley Co., Chicago, Ill., according to *Suds*, the clever employees' newspaper. Others are not so much interested in the starting rate as in the progress they can make and the advancement possible. A third group, those who have had several years experience, will ask "Do you offer steady employment?"

To answer the inquiry the company sketched the history of the concern since it was founded in 1862. In 1926 the entire plant was destroyed by fire. Each employee was given a sum of money and told the concern would start up again as soon as possible. Within one week it had $200,000 worth of raw materials in kettles making soap in the Armour Soap Works. The cosmetic and box departments went to work in warehouse space. During the depression the company was busy and Wrisley employees had regular work and drew regular pay envelopes week after week. In 1942 seven additions had been added to the building. Since 1937 the number of employees has more than doubled. Commenting on this the company said many Wrisley employees have helped make this success possible through their loyalty to the company when the going was tough. Many have helped make the expansion and growth possible by investing some of their savings in Wrisley company stock. They have always received a high return on them in the form of regular dividends.

Today some employees are bewildered by the seemingly fabulous rates of pay they hear are being paid in some wartime industries. A number of former employees have been lured by the magic of high pay to leave. Several have come back and others have told the company that they are sorry they left. A common report from this group is "Everyone seemed friendly at Wrisleys, over here I'm lost in the crowd," or "I didn't realize how well off I was at Wrisleys until I made the change. The Wrisley company always was fair."

The progress and the good name that the Wrisley company has earned only came through teamwork, the company maintains.

"How much do we pay?" The Wrisley record since July, 1940, has included:

a. 3 general wage boosts.

b. Job classification rates giving most employees a raise.

c. Cost of living bonus of 5 per cent.

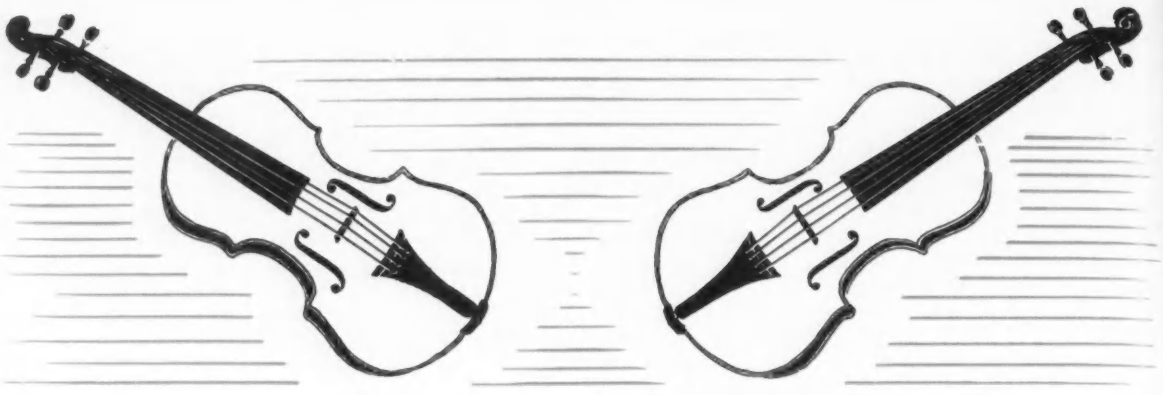
All of which including the recent 5c. per hour raise kept Wrisley employees ahead of the average wage increases in most other companies. In addition, individuals received seniority raises and promotions to higher jobs which meant higher individual rates.

When this question is asked during the employment interview, the company's answer is—"To the best of our knowledge and unless conditions prevent it, you can have a job with the Wrisley company just as long as you want it if you will carry your share of the load."

Dollars Over The Dam

DISCLOSURES after the last war of incredible waste of public funds inspired solemn resolutions to be wiser next time. But the current evidence that money is being flung to the winds with far more abandon than in 1917-18 prompts *Nation's Business* to say that men seem to learn little by collective experience.

The House Military Affairs Committee reveals that, in the construction of the Louisiana ordnance plant, the groaning taxpayers were assessed $3,409 each for building little ten-foot-square sentry houses just big enough to hold two men. A four-car garage cost $9,425. Several of the buildings at this temporary plant ran to more money per cubic foot than the marble palace that houses the U. S. Supreme Court in Washington.



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Flavors

NEW RULINGS RELATIVE TO ALCOHOL TAX

Application and interpretation of the drawback tax provisions on distilled spirits used in the flavoring industry . . . Official of the Treasury Dept. gives questions and answers

UNDER date of November 27, 1942, Stewart Berkshire, deputy commissioner of the Treasury Dept., Washington, D. C., released the following rulings relating to interpretation and application of the drawback tax provisions on distilled spirits used in the manufacture of flavors and flavoring extracts, medicines, medicinal preparations, and food products, as contained in the Revenue Act of 1942 and subsequent regulations issued thereunder. The rulings, in question and answer form, follow:

Q. Is there a general definition of the term "otherwise transferred" which is used throughout Regulations 29?

A. The Bureau holds the term "otherwise transferred" as used in Section 3250 (1), Internal Revenue Code, and Regulations 29 issued pursuant thereto, to mean that there must have been an actual bona fide transfer of title to the product on which drawback is to be claimed from the manufacturer using the alcohol to another person, partnership or corporation. Transfers of products to bona fide sales organizations which are operated independently of the manufacturing business of the producers, are held to come within this ruling provided title to the products are passed to the sales organizations at the time of such transfer.

Q. Is a chain store company which manufactures finished products at a centrally located laboratory entitled to a drawback as of the date the products are transferred to one or more retail outlets for sale, or is the drawback contingent upon the actual consummation of the sale in the retail outlets owned by the manufacturer?

A. Products manufactured at centrally located plants which are distributed through chain stores owned and controlled by the manufacturers are not subject to drawback at the time of transfer from the manufacturing premises to the retail outlet. Drawback may not be claimed until the products have been sold or otherwise transferred at the chain stores.

Q. Is a person or firm who manufactures finished products at one point entitled to the drawback as of the date when the products are removed from the manufacturing premises and placed in storage remote from the manufacturing premises awaiting orders from customers, or is the claim based upon the orders being received and accepted even though such transaction is at a place distant from the manufacturing premises?

A. Drawback cannot be claimed on products which are removed from the manufacturer's premises to remote distribution points for storage until the products have been sold or otherwise transferred at the distribution point by the manufacturer. This answer is based on the assumption that the manufacturer retains title to the products until they are sold or otherwise transferred at the distribution point.

Q. Where alcohol is used in the manufacture of a product under conditions where the alcohol does not become an integral part of the finished product, but is destroyed in the process of manufacture, is the taxpayer entitled to drawback on the alcohol so used and destroyed?

A. Where distilled spirits used in the manufacture of a product are lost by evaporation during the process of manufacture and are not recovered for re-use, drawback may be claimed on the quantity of spirits used in the manufacture of the product. However, drawback is not allowable on spirits which are lost as the result of spillage, leakage, breakage, etc., prior to or during the process of manufacture. Where a portion of the spirits used

in manufacturing nonbeverage products is recovered for re-use during the process of manufacture, drawback is allowable on the difference between the quantity of spirits used and the quantity recovered.

Q. What is meant by retail quantities? Is it the Bureau's intention to place a maximum on the quantity that can be transferred directly to a consumer under the provisions of Sections 197.31?

A. Because of the numerous and varied products on which drawback may be claimed under Section 3250 (1), Internal Revenue Code, the Bureau has not attempted to fix a maximum on quantities which may be sold by producers direct to consumers without keeping the sales record prescribed by items (h), (i), and (j), Section 197.30 of Regulations 29. It may be stated, however, that over the counter sales, sales by producers' representatives from trucks or otherwise at the consumer's residence, or sales of products in reasonable quantities under conditions which make the keeping of such records impracticable is considered as coming within the exemption authorized by Section 197.31.

Making Claims Under Drawback

D. W. GRIFFIN, district supervisor of District No. 2, Alcohol Tax Unit, Internal Revenue Service of the Treasury Dept., released the following bulletin December 16, 1942, relating to drawback on distilled spirits used in nonbeverage products.

After further study of the matters pertaining to drawback on distilled spirits used in non-beverage products as provided for by Regulations 29, it is the opinion of this office that in order for manufacturers of such products to secure proper action on claims the following is necessary:

Where products are produced in conformity with the U. S. Pharmacopoeia, the National Formulary, the American Institute of Homeopathy, or standards of the U. S. Food and Drug Administration, yet require more spirits to be used in their production than are present in the finished product, such as percolated products, a quantitative formula must be furnished to the district supervisor with the first claim filed for each such product showing the quantity of distilled spirits required to be used in the production of a given quantity of finished product as compared with the alcoholic content of the finished product.

Where products are produced in such manner as to involve recovery of a portion of the distilled spirits, a quantitative analysis must be furnished to the district supervisor showing the quantity of distilled spirits originally placed in process, the quantity recovered and the net amount used in the production of a given quantity of finished product. The same shall apply where spirits are used and entirely lost during actual production.

An actual signed copy of each quantitative formula, serially numbered exactly as the copy furnished to the district supervisor, should be kept on the manufacturing premises, available for inspection by government officers.

Where products subject to exportation drawback are shipped abroad, the full amount of allowable export drawback should be applied for on Form 1582 and no claim for drawback under Regulations 29 should be made. In order that officers may be able to reconcile the total reported sales with the alcohol used, in accordance with Section 197.21 (b) (3) and (b) (4) of Regulations 29, it is recommended that any such products exported be listed in red on any summary of sales of each product and not included in the totals of products sold for which drawback is claimed.

Waste

"SIX FACTORS are responsible for waste . . . six controllable factors," says Fred W. Fischer in a recent issue of *The Office*. These six factors are—

1. Carelessness, rough handling of materials and equipment.
2. Lack of training in proper use of materials and equipment.
3. No interest in development of use of substitutes.
4. Failure to change over to new order of things and practice.
5. No sense of proportion—use of materials not justified by job to be done.
6. Possession of excessive or untested equipment.

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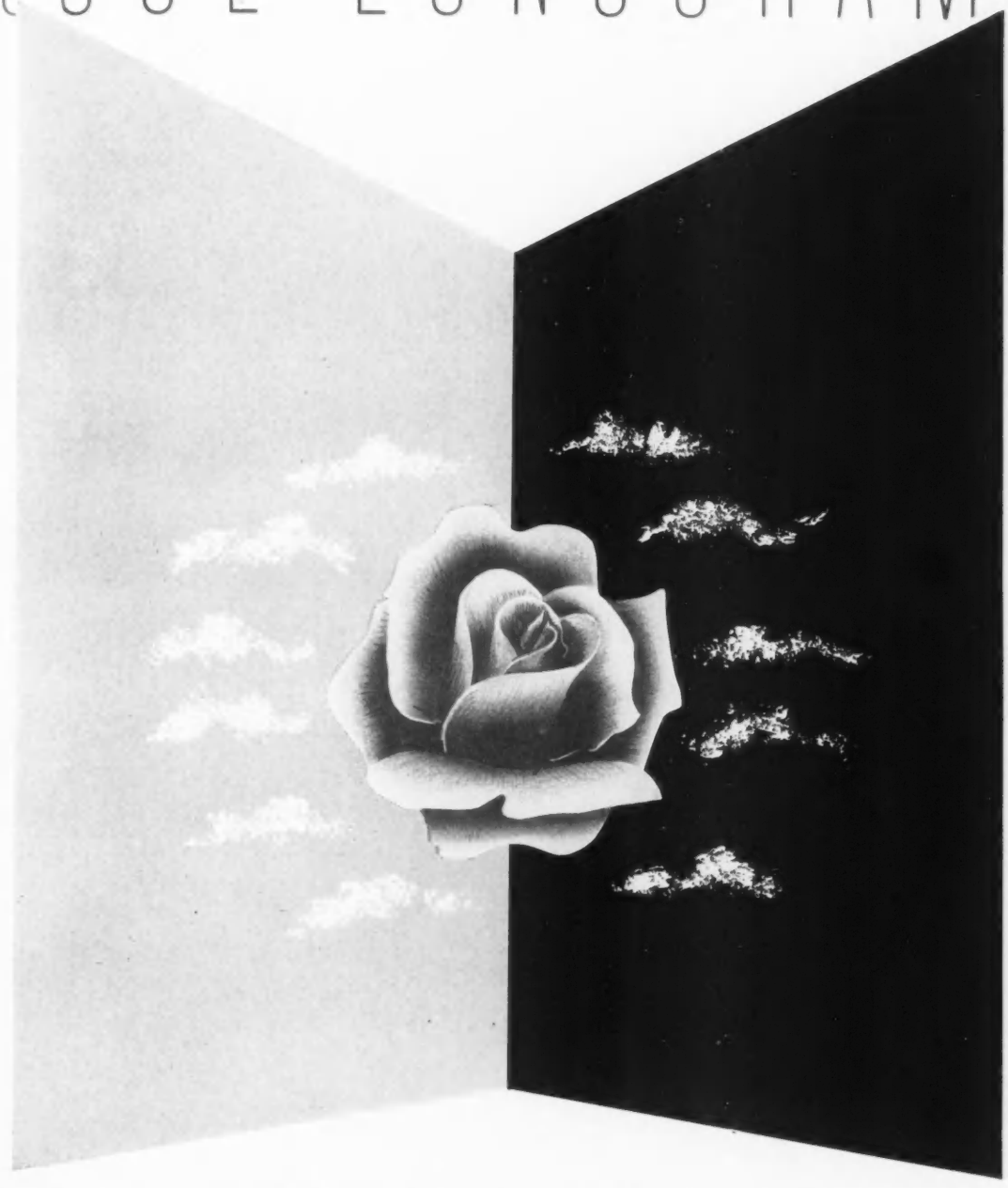

SILTEN

A cloud of scent, a marvel of green, dewy freshness, Rose Longchamp is the very soul of the red rose. All the volatile substances usually lost in the process of obtaining the natural oils are at last captured in Rose Longchamp. Entirely new in concept, Rose Longchamp has achieved that leafy emanation of the flower, having none of the conventional "essence" odor of synthetic and natural roses. We will gladly submit samples on request.

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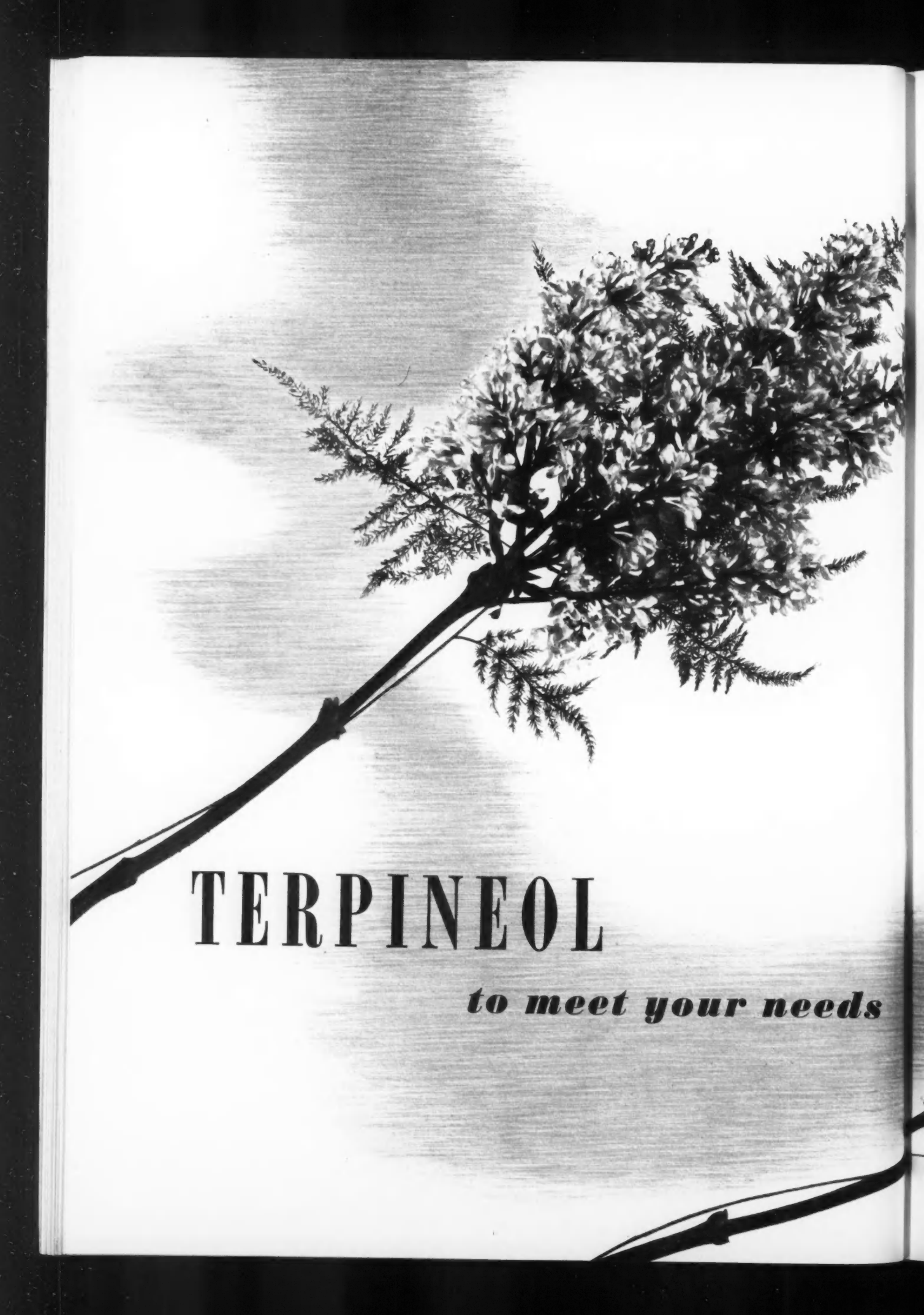
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For more than sixteen years Givaudan has been producing a Terpineol that for quality and uniformity has been recognized as outstanding by users throughout the cosmetic industry.

This quality and uniformity was still further improved in 1937 by a new method of fractionation by distillation in vacuum, using specially designed apparatus.

The years of experience gained in research and production of Terpineol are proving of great value to Givaudan customers today, for they are assured of a completely dependable source of supply and expert counsel in regard to its use. Here is a typical example of how Givaudan foresightedness is helping to maintain the flow of materials during wartime. If you need high quality Terpineol, order from Givaudan now—your needs can be met promptly.

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New Products and Processes

Ameris, new natural fixative

As is well known, ambergris, probably the most valuable fixative, comes from the whale, a mammal which breathes like a land animal. Research indicates that ambergris is a by-product of undigested food thrown up by the whale just as other animals such as owls, vultures and hyenas disgorge undigested food. Ambergris therefore is compounded from fish, crustacean and other marine life mixed and chemically dissolved in stomach acids and fluids. It produces a solid which, while insoluble, retains the qualities of food which has not been absorbed into the circulatory system. The virtue of ambergris, it is pointed out, lies in the fact that it is predigested matter of animal origin that has been broken down by enzyme action in the stomach. Its active ingredients may be extracted.

A new product, Ameris, offered by the Sparhawk Co., Sparkill, N. Y., is stated to come also from a warm blooded animal that feeds off the same food from the sea as the whale; and, it is claimed, the mechanical processes are the same, only the host is different. Ameris, it is added, retains the distinctive qualities of ambergris because it passes through the same channels and is subjected to the same chemical changes, although not derived from the whale. It has a slight sweetish odor similar to ambergris but of a strong animal character. The two are said to be combined in an agreeable, warm aroma that makes it attractive for many delicate scents where even musk might be too pronounced. As a result it is recommended where a fixative, mild in its effect and soft in its odor reaction, is required.

Heavy duty carrier

A new heavy duty carrier designed to handle a column of self-nesting boxes of materials is announced by the Ernst Carrier Sales Co. The carrier is operated by one man and forward tipping or swaying is eliminated by an adjustable clamp.

Marketing chart of U. S.

A basic marketing chart of the United States which records a variety of important facts and figures for each state and geographical area is announced by the Research Co. of America. The preparation of the chart required more than a year of work, collecting and checking government and other data. Figures include population, retail sales, income tax returns, distribution of families, sex groups, age groups, tenure status, housing facilities and equipment, such as gas and electricity, radio, private baths, average monthly rent, educational attainment of population and other data. It is believed that this is the first time all such marketing data has been assembled into one chart for ready reference.

Conserving life of belt drives

The 23 ways to conserve the life of multiple V-belt drives are described and illustrated in a booklet issued by the Multiple V-Belt Drive Assn., 140 S. Dearborn St., Chicago, Ill. The purpose of the book is to educate power users in the proper procedure of selection, installation and maintenance of multiple V-belt drives in order to obtain the maximum life with every V-belt. It is both written and illustrated in a simple, easy-to-understand manner and in no sense is it advertising matter or propaganda. It is offered free of charge to all who request it.

Gum Karaya

Gum Karaya is featured in an interesting, an informative and a well illustrated leaflet issued by Innis, Speiden & Co., 117 Liberty St., New York, N. Y. Not only is useful information about this gum given but price ranges over the years from 1929 to 1942 are included.

Books to Aid You

THE RECOVERY OF VAPORS. *Clark Shove Robinson. 6 x 9 in., 273 pages, 116 illustrations. Reinhold Publishing Corp. 1942. Price $4.75.*

Special reference is given to volatile solvents in this authoritative and useful work. In it the author presents in as simple and complete form as possible the fundamental principles involved in the recovery of vapors, illustrating them with numerous examples. He discusses briefly the various factors entering into the design of recovery equipment and gives descriptions of the standard forms of apparatus in more common use. Some of the chapter headings indicate the scope of the book: Gases and Vapors, Vaporization, Liquid Mixtures, Condensation of Mixed Vapors, Rate and Capacity, Adsorption, Recovery of Adsorbed Vapors, Adsorption Apparatus for Solvent Recovery, Commercial Activated Carbon Systems, Solvent Recovery by Condensation at Constant Pressure, Cooling with Water and with Refrigeration, Heat of Vaporization in the Absence of Gases, Vaporization in the Presence of Inert Gases, The Gas Under Natural and Under Forced Circulation, Solvent Recovery by Compression and Cooling and by Scrubbing, Scrubbing Apparatus, Special Absorbents and Extraction by Solvents. A complete index makes easy the location of any point.

INDUSTRIAL RESEARCH. *F. Russell Bichowsky. 5½x8½ in., 126 pages, cloth covers. Chemical Publishing Co., 1942. Price $2.50.*

This book emphasizes the social importance of research and outlines the general principles of management and organization which have proved successful in the laboratory. Accordingly, it is of value not only to the research worker but also to the business executive. In a concrete form it presents a theory of research in its social aspects.

Chapter headings are: Research the Destroyer of Business; Research the Creator of Wealth; What is Research?; The Prenatal Factors of Invention; Research for the Small Company; Place of Research in Company Organization; the Equipment of the Laboratory; and Technical Control of the Laboratory.

CARE AND PRESERVATION OF BEAUTY FOR THE INDIVIDUAL WOMAN. *Dr. Charles Lazar. Illustrated by Margaret Maday. 5x7½ in., 172 pages, cloth covers. The Sherwood Press, 1942. Price $2.50.*

The chief purpose of the author is to give exact prescriptions and advice to the individual woman in a clear and concise way. The dangers of wrong and injurious treatments are pointed out so that the user may carry out the directions in her own home to preserve her beauty. The contents include the psychology of beauty, properties of the normal complexion, daily washing, water, soap, brushes and face flannels, how to wash, baths, after the bath, greasy complexion and its care, cleansing of blackheads, treatment of acne, acne due to medicaments, dry complexion and its care, premature wrinkles, massage, massage by hand, massage of the face, massage by machine, schemes for the care of the complexion, making-up, the cream under the powder, the powder, the eyes and cosmetics, lipstick, care of the mouth and teeth, the legs and feet, callosity, care of the hair, superfluous hair, freckles and chloasma, moles, excessive perspiration, use of household materials in the care of beauty, how to sun bathe, how to alter the shape of the breasts, obesity and slimming cures.

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AMONG OUR FRIENDS

▸ Roy A. Hunt, president of the Aluminum Co. of America, Pittsburgh, Pa., reports that privately owned and government financed plants will have the capacity this year to produce more than two billion pounds of aluminum. The company's quarter billion dollar expansion program is near completion.

▸ Leon Antoine Danco, born in Belgium and resident of Fairfield, Conn., for the past 15 years, has been commissioned a captain in the U. S. Marine Corps. He is now on active duty with this famous branch of the U. S. forces and is stationed temporarily in Quantico, Va., for training. Capt. Danco has been in the United States for the past 23 years, coming to this country after the close of the World War I. In 1914, at the age of 16, he volunteered at Brussels in the Belgian army and served 52 months at the front, 36 months of which were spent in Africa. Among the six medals he has the distinction of wearing are the famous Silver Medal of the African campaign together with the fourragere which were awarded to officers who took part in the campaign in German East Africa.

Capt. Leon Danco

Capt. Danco is the son of Pierre Danco, well known in the essential oil industry for many years, and he is a brother of Gerard J. Danco of the Gerard J. Danco Co., New York, N. Y. Soon after coming to America he became vice-president of the Belgium Trading Co. which he left in 1927 to organize the perfume division of McKesson & Robbins for which he created the Lucretia Vanderbilt line. He continued in this position up to the time he joined the armed forces.

▸ J. L. Younghusband, president of Associated Distributors, Chicago, Ill., has announced the appointment of Jess H. Whiteley as director of sales, effective January 1, succeeding Leon I. Stein, who has returned to Philadelphia, Pa., to assume the management of Sol Levy Co. In his capacity as head of his own company, Mr. Stein will continue to represent Associated Distributors and Dana perfumes in the Philadelphia territory.

▸ Louis Anthony Romani, formerly associated with Aromatic Products, Inc., New York, N. Y., who was a member of a tank destroyer team credited with wiping out four Axis medium tanks attacking Medjez el Bab in Tunisia, has been commissioned a second lieutenant in recognition of his part in the action. During his five years with Aromatic Products before entering the armed forces, he was a member of the firm's compounding department.

▸ George Lewis, of Cosmetics, Inc., New York, N. Y., is receiving the congratulations of friends on the arrival of twin sons the day after Christmas.

▸ Gust Carsch has joined the Lady Esther Co., Chicago, Ill., as perfumer. In addition to research and product development and control work in the perfume field he will do some product development work with cosmetics.

▸ Capt. Northam Warren, Jr., son of the founder and president of the Northam Warren Corp., Stamford, Conn., is to be married to Miss Dorothy Edna Caldwell, daughter of Mrs. Edith Cantrell, of Lawton, Okla., this month. Capt. Warren is stationed as an instructor in the officers' training course of the Field Artillery School, Fort Sill, Okla. He was vice president and sales manager of the Northam Warren Corp. when he entered the army.

▸ Henry H. Eickmeyer has been appointed special sales representative for Schimmel & Co. His headquarters will be in the New York office.

▸ Lieut. Chandler W. Swanson, son of Dr. A. F. Swanson, perfumer-chemist for Elizabeth Arden, New York, N. Y., has been awarded the coveted Navy cross for extraordinary heroism against the enemy in the Southwest Pacific. The presentation was made by Capt. W. H. Buracker, acting commandant, on behalf of the president of the United States in impressive ceremonies at the Naval Air Station, Pensacola, Fla. Lieut. Swanson, a naval aviator, served aboard the U.S.S. Lexington. Lieut. Swanson's citation signed by Admiral Nimitz reads as follows: "In the name of the President of the United States, the Commander in Chief, United States Pacific Fleet takes pleasure in presenting the Navy Cross to Lieut. Chandler W. Swanson, U.S.N., for services set forth in the following citation — for heroic and distinguished service in the line of his profession as pilot of a scouting plane in action against Japanese forces in the Coral Sea on May 7 and 8, 1942. He participated in a dive bombing attack on an enemy aircraft carrier pressing home his attack with skill and determination and contributed materially to the destruction of the enemy vessel. As a member of a combat patrol, he repeatedly attacked enemy planes in the face of heavy enemy opposition." Lieut. Swanson was graduated from Carleton College in 1937. He enlisted and received his wings in 1938. At present he is chief flight instructor at Pensacola.

▸ M. Stanley Barker, metropolitan New York sales manager for Magnus, Mabee & Reynard, Inc., and Miss Maryanne James, assistant to the treasurer, were inducted into M., M. & R.'s 20 Year Club at an impressive ceremony recently staged at the Hotel Warwick, New York, N. Y. Nine active members of the 20 Year Club and one retired member, Edgar A. Lessels (1898-1934), were seated on the judging platform. William F. Fischer, general sales manager, officiated by right of seniority, since he is the oldest active employe in terms of service. Dinner and entertainment preceded the induction.

M. S. Barker

▸ Ensign Robert W. Montgomery, eldest son of Mr. and Mrs. John H. Montgomery, of Montclair, N. J., was married November 26 to Miss Doris Betty Waller, daughter of Mr. and Mrs. Guy E. Waller, at Rocky Mount, N. C., the bride's home town. After the wedding the couple left for a brief stay at the home of the bridegroom's parents in Montclair, following which both flew to San Diego, Calif., where Ensign Montgomery will be temporarily stationed in preparation for active service.

Meanwhile, his father, who is secretary of Fritzsche Brothers, Inc., and well known in the flavoring and essential oil field, with Mrs. Montgomery and daughter, Jacqueline, took the occasion of their trip south to spend a few days at Chapel Hill, N. C., where their son attended school prior to enlistment in the U. S. Naval Reserve. Another son, John, now a gunner in the Army Air Force, missed his brother's wedding by a few hours due to the untimely expiration of his brief leave.

▸ Charles E. Jacobs, who has been associated with Richard M. Krause, Inc., New York, N. Y., has been appointed production manager. He was formerly with the U. S. Lithographing Corp.

NEWS FROM WASHINGTON

by ARNOLD KRUCKMAN, *Washington Correspondent*

Automatic pricing for new products under consideration

While this is being typed, Pat Murphy Malin, price executive of OPA, is presiding over a very crowded meeting in the Census building of an industry committee which is discussing formulae for automatic pricing of several divisions in pharmaceuticals, drugs, and particularly cosmetics and toiletries. This conference is focussed especially on prices for new kinds of packaged goods, and prices for old types of packaged goods that have been changed. The general idea is to set up a formula that will place on the manufacturers and the wholesalers the responsibility for making the automatic prices. The prices will apply to retailers but, according to the latest news from the front in the Census building, the burden of making prices will not rest on the retailers. The discussion involves changes in containers and ingredients as well as increased costs of labor and transportation and other equations.

The mimeographed agendum submitted to each of the conferees is a very complicated and extremely detailed document. Broadly, the formula basically follows MPR 282 published December 10, 1942, which provided an automatic method of making prices, to be used by manufacturers of private formula products who use their own raw materials. Comparable products with comparable packaging and ingredients and requiring comparable handling, and carrying comparable costs, may determine comparable prices. But the prices may be altered by OPA within 14 days after they are fixed. Details about the final order, now in the making, probably will not be available for at least a week. If it is true what they say about the new OPA, the prospective order should be much less legalistic and more real than the last order.

Committee considers paper shortage, cut in wrappings, boxes due

Another meeting also is going on currently. It is being held by Deputy Chief C. A. Willard of the Toiletries and Cosmetics Brand of the Chemicals Division of the Office of Civilian Supply of the War Production Board. The meeting has been in progress since the first work day of the new year. It consists of members of the industry who are discussing paper and paperboard packaging.

WPB prohibits further imports of oils without permission

Early in December the Stockpile and Transportation Division of WPB ruled that essential oils may be imported without specific authorization at the rate of one tone per specific essential oil per ship per importer. This means that a firm may import a ton each of essential oils of several specific types on ships touching foreign ports when the agent or seller can arrange for cargo space. Later in December WPB issued General Imports Order M-63 prohibiting import of a list of materials without specific authorization. The list included babassu nuts and kernels, cashew nut oil and shell oil, castor oil, coconut oil, cohune nuts and kernels and oils, crude and refined glycerine, palm nut kernels and oil, palm oil, oiticica oil, talc, annato and annato extracts, beeswax, cassia either ground or unground, various gums, limes, mace, mate, nutmegs either ground or unground, oleo stearin, peppers, sesame seed and soap.

WPB also restricted use of annato or annato extracts exclusively to coloring food products. Too, WPB warned that flavoring plants, even kitchen herbs, would be short unless the public raised some.

Containers, closures receive attention in new orders

Order M-81, amended, permitting the manufacture of quart cans for essential oils, provides a quota of 100 per cent of the quantity used in 1942. Both body and ends may contain up to 50 per cent tin. Order M-104 permits closures to be made of blackplate for glass spice containers, for flavors, salad dressings, and many types of foods. Closures for glass containers for essential oils may be made of tinplate. In each case the quota is fixed at 100 per cent of the use in 1942.

Dividing the peppermint oil between Britain and U.S. causes headaches

The battle with Britain over peppermint oil apparently continues. According to Secretary Wickard's latest report, the British have lend-leased 183,000 pounds of American peppermint oil since April 29, 1941. They use it to maintain national morale. They tell us each of the 40,000,000 persons in the British Isles eats two ounces of candy and peppermint products weekly. You recall how content English people are to suck those eternal peppermint drops. We normally use 1,000,000 pounds peppermint oil annually for food, beverages, chewing gum, candies and flavors. We ordinarily import as much from Russia as we export to others. Our supply of one million pounds oil has been fairly static. England also has imported considerable peppermint oil from Russia but apparently the Russian supply has been cut to almost nothing. It comes from the Ukraine, which is overrun by the Germans.

The Department of Agriculture estimates our total supply this year will be within 1,300,000 pounds; but in addition to our normal requirements, and the British demand which totals 250,000 pounds, we also find it is necessary to make menthol out of our peppermint oil. We need 400,000 pounds menthol. Some expert here asserts we need 25 per cent of all our peppermint oil product to supply our minimum need of menthol. It follows that, if we use 25 per cent of our available supply for menthol and give the British 250,000 pounds which they demand, we will be well under our normal needs and probably will have to get along on something like 60 per cent or 70 per cent of our ordinary requirements. The experts here fear that a reduction in this volume may raise Cain, particularly among those who use menthol for vari-

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U.S.I. CHEMICAL NEWS

January ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1943

New Acetone Uses Indicated by Study Of Patent Files

Chemical Plays Important Part In Processes in Varied Fields

A search of the patent files reveals many new uses for acetone in a number of varied fields, somewhat of a surprising fact because acetone has generally been considered a staple chemical with a fairly well-defined field of utility. A discussion of a few of these patents may serve to indicate the variety of hitherto unexplored applications of acetone.

One such patent concerns the concentration or recovery of the values of non-metalliferous ores by froth flotation processes in which fatty acid substances are employed as promoters. The inventor states that the power of the promoters can be very greatly increased by dilut-

(*Continued on next page*)

Reactions Show Possibilities of Ethyl Sodium Acetone-Oxalate

Versatility Clearly Indicated by Formation of Ring Compounds

A study of the reactions of ethyl sodium acetone-oxalate, a compound having the formula $CH_3COCH = C(ONa)COOC_2H_5$, shows many new interesting possibilities.

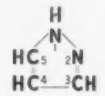
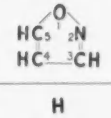
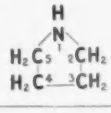
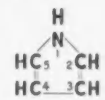
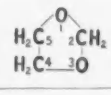
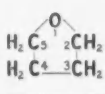
The versatility of this chemical or the acid derived from it, alpha, gamma-dioxo-valeric acid, or its esters, in the formation of ring compounds may be seen from the table below. The first line of the table, for instance, shows that hydrazine reacts with ethyl sodium acetone-oxalate to give 3-methyl-5-pyrazolecarboxylic acid. One reaction not included below is that of ortho-aminobenzaldehyde, which is reported to produce a quinoline derivative, $C_{11}H_{13}O_3N$, whose structure has not been completely elucidated [Monatshefte für Chemie **52**, 59-67 (1929)].

Samples of ethyl sodium acetone-oxalate may be obtained from U.S.I. on request for experimental work.

Ethylene Used as Alkylator To Produce Anti-Knock Gas

CHICAGO, Ill. — A method for alkylating isobutane by ethylene in the presence of a particular type of catalyst to produce a motor fuel of relatively high anti-knock value has been developed by two men here, according to a patent that was granted recently.

ETHYL SODIUM ACETONE-OXALATE $CH_3COCH = C(ONa)COOC_2H_5$

RING COMPOUNDS	SUBSTITUTED GROUPS	REAGENT	REFERENCE
PYRAZOLE 	3-methyl; 5-carboxylic acid	HYDRAZINE	Knorr A.279,217 (1894) German Patent 74,619,F.3,938
	3-methyl; 1-phenyl; 5-carboxylic acid 5-methyl; 1-phenyl; 3-carboxylic acid	PHENYLHYDRAZINE	*Claisen & Roosen A.278,279,288 (1893)
ISOXAZOLE 	3-methyl; 5-carboxylic acid 5-methyl; 3-carboxylic acid	HYDROXYLAMINE	*Claisen, B.24,3908 (1891)
PYRROLIDINE 	2,3-dioxo; 4-acetyl; 1,5-diphenyl	BENZALANILINE	Schiff, Gigli, B.31,1307 (1898)
	4,5-dioxo; 1-methyl; 2-phenyl; 3-acetyl	BENZALDEHYDE & METHYLAMINE	German Patents 280971, 283305,290531 F.12,792, 793,797
PYRROLE 	4-methyl; 3-acetyl; 2-carboxylic acid	AMINOACETONE	Piloty, Blömer B.45,3752 (1912) Fischer et al., A.461 :244 (1928)
1,3-DIOXOLANE 	4-oxo; 2-trichloromethyl; 5-acetyl methylene	CHLORAL	Schiff B.31,1305 (1898)
OXOLANE 	2,3-dioxo; 4-acetyl; 5-phenyl	BENZALDEHYDE in piperidine	Ruhemann J.C.S.89 1239,1240 (1906)
	2,3-dioxo; 5-phenyl; 4-cinnamoyl	BENZALDEHYDE with dried HCl	" " " "
BENZENE	3-methyl; 5-hydroxy; 1-carboxylic acid	BARIUM HYDROXIDE	Claisen B.22,327 (1889)
	5-methyl; 3-hydroxy; 2-ethoxalyl; 1-carboxylic acid	SODIUM ACETATE	C.A. 32,3340 (1938)
PYRIDINE	4-methyl; 3-acetyl; 2,6-dicarboxylic acid	AMMONIA	Mumm, Bergell B.45,3045 (1912)
	4-methyl; 3-acetyl; 6-carboxylic acid	AMMONIA	C.A. 26 2171 (1932)
	4-methyl; 5-acetyl; 2,6-dicarboxylic acid	AMMONIA	
	2,6-dimethyl; 3,4-dicarboxylic acid	ETHYL β-AMINO-CROTONATE	Mumm & Hunecke B.50,1573 (1917)

*See also B.45, 3045 (1912). Abbreviations: A. — Liebig's Annalen; B. — Berichte der Deutschen Chemischen Gesellschaft; C.A. — Chemical Abstracts; F. — Friedlaender, Fortschritte der Theerfarben Fabrikation; J.C.S. — Journal of the Chemical Society.

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January ★ **U.S.I. CHEMICAL NEWS** ★ 1943

Many New Chemical Developments Noted During the Past Year

An idea of the outstanding chemical progress made during 1942 can be gained by a brief review of the major developments summarized in the past year's issues of U.S.I. CHEMICAL NEWS. During 1942 the following topics were discussed in leading articles in this publication:

January. Reactions of urethan. Unusual possibilities of alkyl phosphates.

February. Importance of water in resin solutions. Use of chemicals in lengthening the life of fish nets.

March. Applications of ethyl benzoylacetate in dye manufacture and chemical synthesis. Luminescent finishes.

April. Ethyl carbonate as a raw material. Lined steel drums.

May. Possibilities of ethyl acetoacetate. Novel experimental vinegar generator.

June. Determination of the combined acids in cellulose mixed esters. New chemical to end corrosion of iron by lacquers.

July. Utility of ethyl sodium oxalacetate in chemical synthesis. Ethyl formate for treating yarns.

August. Carbon dioxide as a fire extinguisher and inflation agent. Availability of ethyl sodium acetone-oxalate for experimental work.

September. Resin emulsions as possible latex substitutes. Novel perfumes from Indian plant lore.

October. New method for studying drying rates of lacquer films. Use of heat treatment in improving quality of yellow pigments.

November. Preparation of ethyl oxalacetate. Puerto Rican plants yield essential oils.

December. The prevention of foam in casein paints and other protein compositions. Procedure for improving synthetic camphor yield.

(Copies of these issues are available on request)

Varnish for Maintaining Sterile Operative Field

A new skin varnish for maintaining sterility in the operative field has been developed according to the following formula:

Santicizer B	16.5 g.
Acetone	605
Ethyl cellulose	165
Ethanol	715
Castor oil	16.5

Tests Show Superiority of Ethanol as Disinfectant

Ethanol is considered to be an ideal disinfectant, according to experiments in which the effect of ethanol in adsorption tests, particularly in the disinfection of hands, was studied.

One of the special advantages claimed for ethanol is its capacity to kill large numbers of bacteria. It was discovered that when two loopfuls of solid growth of staphylococci or B. coli are suspended in only two drops of 96% ethanol, complete disinfection takes place in a few minutes, whereas 1% Zephirol, 5% Sagrotan and 0.1% mercury solutions fail to achieve this.

New Acetone Uses

(Continued from previous page)

ing the flotation reagent with about 20% or less of a water-soluble ketone such as acetone.

Another patent of interest involves the preparation of sulfanilylamino-pyridine compounds. A mixture of acetone and pyridine is used to form a reaction medium for reacting p-acetylaminobenzene sulfonyl chloride with alpha amino pyridine for the production of 2-acetylsulfanilylamino-pyridine.

Printing-Ink Binders

Rapid drying properties, high gloss and water-insolubility at slightly elevated temperatures are among the advantages claimed for the use of acetone-formaldehyde resins as binders for printing inks. The formation of such an agent comprises interacting formaldehyde with acetone in the presence of an alkaline catalyst, pigmenting material, and a liquid organic solvent such as acetone.

In another patent, acetone is suggested in combination with nitrocellulose to form an adhesive for use in holding metal parts to be welded into position, such as threaded steel buttons to a background of steel ship plates.

A more simple method of producing alcohols of the acetylene series than those now in use is claimed in a recent patent. Such alcohols are prepared directly from acetone and acetylene by bringing into contact acetylene with a mixture of acetone and an aqueous solution having an alkaline reaction.

Acetone is also suggested by an inventor for the manufacture of beta-cyanoacrylic acid esters. According to this process, such esters are obtained by reacting an ester of alpha-chloroacrylic acid with a cyanide of an alkali metal or an alkaline earth metal at approximate room temperature in the presence of water and acetone.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A moistureproof sealer particularly developed to seal waterproof papers used as liners in shipping containers is said to even protect goods against immersion. A white, colorless fluid, the adhesive seals overlapping liner seams against air, moisture and temperature extremes. **(No. 650)**

U S I

A liquid temperature indicator employing the same principle as pellets and sticks is intended for use in signalling temperatures. It is available in melting points from 125 to 1600° F. When applied, it dries instantly, then liquefies sharply when the desired temperature is reached. **(No. 651)**

U S I

A grease-impervious paper box for packaging ointments and similar substances is offered, which has an outside covering of parchment paper supplementing the chemical compound which coats the inside. Although not impervious to water and grease in the same degree, it is said to successfully package substances which have a water content up to 5%. **(No. 652)**

U S I

A protective paint is offered for exterior and interior surfaces having an appreciable amount of exposed metal. The primers are said to be rust inhibitive and provide a tough, elastic film which expands and contracts at the same rate as the metal. **(No. 653)**

U S I

Citric acid substitutes are now being produced domestically by a manufacturer who made similar products in Europe during the last World War. **(No. 654)**

U S I

A prepared catalyst for isomerization processes has been developed, consisting of activated bauxite impregnated with 15 to 20% of anhydrous aluminum chloride. **(No. 655)**

U S I

Non-ionic emulsifiers are available commercially which are said to offer very interesting possibilities in the manufacture of synthetic rubbers by polymerization of butadiene, styrene, acrylonitrile or other unsaturated compounds. **(No. 656)**

U S I

Static-conductive linoleum is offered which is described as nonsparking and highly conductive of static, yet providing adequate protection against accidental grounding from service charges. It is said to meet Ordnance Department specifications for floor and table coverings in explosives operations. **(No. 657)**

U S I

A new colorimeter of the continuous-flow type is offered, which is said to permit the determination of light transmission of a liquid passing through the instrument. Its application, therefore, is suggested for the continuous control of chemical processes in which the color or turbidity of a liquid must be checked as an indication of concentration or other property. **(No. 658)**

U S I

Paint brush bristles have been developed from Nylon which are not only said to have the required taper, but also resiliency, toughness, length and inertness to paint ingredients. At present their use is being restricted to military purposes. **(No. 659)**

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Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

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Ethyl Ether Absolute—A.C.S.

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®Curbay Binders
®Curbay X (Powder)
Ethylene
Ethylene Glycol
Nitrocellulose Solutions
Potash, Agricultural
Urethan
®Vacatone

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ous products in the American economy. Thus, under the rose the issue is joined between some government officials and the British who represent their people in Washington. The British, after the good old John Bull style, vigorously demand the quantity they say they require. In rebuttal some government officials wish to call a meeting of all members of the American industries which use peppermint oil. The idea is to let them determine the question. In this way it is hoped that the problem may not become the subject of investigation by Congress, which has been suggested by some of those who are interested in the menthol angle.

Allocation of raw materials in Africa expected soon

Aside from peppermint oil, lend-lease also supplies to the British lemon oil, caraway oil, sassafras oil, grapefruit oil, tangerine oil, nutmeg oil, wormseed oil and a scattering of other oils. We also are told by the Combined Raw Materials Board, apparently representing the United Nations, that it has allocated some of the raw materials available for export from French North Africa. The allocating apparently has been done by Britain and the U. S. In the first schedule the British received eight materials and the Americans four. The subject is particularly interesting to your industry because there are volumes of oils and essential oils as well as gums and similar materials in North Africa, some of which come from French West Africa. Their allocation is anticipated in the near future.

New institute in Costa Rica to experiment with tropical crops

The Inter-American Institute of Agricultural Sciences has become a fact in Costa Rica. Dr. Earl N. Bressman, former member of the U. S. Department of Agriculture staff, is its director. The institute has been placed at Turrialba, on 1,235 acres suitable for experimental cultivation of all tropical crops. The place is within less than two hours of an almost complete cross-section of tropical American conditions. The institute is managed by a corporation which consists of the United States Secretary of State and representatives of all Latin-American republics. The United States furnishes the funds. The institute is designed to provide a place for research on tropical agriculture, for training scientific personnel in tropical agricultural problems.

Other Latin American governments have contributed research facilities in Argentina, Brazil, Mexico, Peru, Cuba and Puerto Rico. Robert A. Nichols is the agriculturist in charge of field operations. Jose L. Colom, of the Pan-American Union, is secretary; Rex A. Pixley, lately of Haiti, is business manager. Obviously, exploration and research in production of aromatic plants and distillation of essential oils, particularly those heretofore obtained from the Dutch East Indies, from Africa and even from the Mediterranean countries, will be important phases of the institute's work.

Quotas for spices changed as supplies vary

Cassia quota was reduced from 60 to 50 per cent for packers, wholesalers and industrial users under Supplementary Order M-127-b, published January 4. Cloves quota was increased from 90 to 100 per cent; and ginger quota, for the benefit especially of carbonated beverage and baking industries, also household consumers, was increased from 100 to 115 per cent of the corresponding deliveries in the same period of 1941. Government reports more of these spices are coming in from Zanzibar, China, Madagascar and British West Africa. OPA has issued a special statement emphasizing that there will *not* be an upward revision of ceilings for pepper. The reserve in this country now is easily sufficient for all needs for two years.

Dehydrated foods get attention of new Army board

The Army has announced it is making a concentrated form of pre-cooked rice with raisins, sugar, salt, spices and vanilla flavoring which it supplies to the field forces in dehydrated form. All forms of dehydrated foods, with concentrated flavors, are becoming more popular and expanding amazingly in use. To develop these various forms the Army has organized a Subsistence Research Projects Board with Col. George F. Doriot, chairman; Col. Paul P. Logan, vice-chairman; and with a membership including Col. Rohland H. Isker, Army Subsistence Research Laboratory, Chicago; Prof. Bernard E. Procter, MIT, Boston; Dr. Ancil B. Keys, University of Minnesota; Gerald A. Fitzgerald, Richardson & Robbins; Miss Mary I. Barber, Kellogg Co., special consultant to the Secretary of War; George W. Burgess, Army food technologist, secretary.

Chemical sales restricted only on penalized item

OPA recently issued a warning that no one may sell chemicals or allied products whose sale has been prohibited as a penalty. The warning apparently means that while the seller may not sell the actual thing prohibited he may continue to sell other materials and products in which he deals.

Chicle for chewing gum imported only with WPB authorization

Stockpiling and Transportation Division also announced that hereafter chicle for chewing gum may be imported only by specific authorization of WPB. It insisted no change is contemplated in the volume of chicle to be permitted to come into the U. S., but it is desired to check closely the quantities moving in. Chewing gum is moving off retail counters faster than manufacturers can produce and distribute, according to WPB. The supply of gum from Malaysia, Borneo, Java and Sumatra has been cut off. The difficulty with the supply from Central and South America is the lack of cargo space. It also is reported that American firms are buying mate in large quantities in the Argentine. Research has revealed mate is a valuable source of caffeine and other ingredients.

Ascorbic acid allocated; purchase of laboratory equipment limited

Ascorbic acid (Vitamin C) supplied in large quantities by lend-lease to other countries has been placed under complete allocation control. WPB also has placed a limitation on purchase of laboratory equipment. L-144 provides no purchase may be made valued at more than $50 per item, nor may any quantity of the item be purchased in excess of $50 value. Authorization may be obtained for the purchase of more by applying on Form PD-620 on the basis of an AA-4 rating. At the same time WPB appealed to those who have midget motors used in laboratories to sell them to the government if not used.

Alcohol drawback obtainable only after product reaches purchaser

Internal Revenue has let it be known that taxes on alcohol used for non-beverage purposes may be reclaimed only after the finished product has been completed, sold and is by title in possession of the purchaser. There is no ruling yet on the status of the manufacturer who sells his own extracts and flavors and uses them in fountain syrups, still beverages, carbonated drinks and confectionery. If you wish a detailed statement about exemptions on imported alcohol for industrial purposes, ask your nearest Collector of Internal Revenue for circular T. D. 5178. Department of Agriculture announced that its experiments have revealed granular flour yields more alcohol than either corn or corn-wheat mixtures.

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NAUGATUCK CHEMICALS LTD., ELMIRA, ONTARIO, CANADA

Sole Representatives for: BRUNO COURT, S. A., GRASSE, FRANCE C. A. P. P., CASABLANCA, MOROCCO

NEWS and EVENTS

Shortage of castor oil limits use to 25% for cosmetics, 0 for soaps

Castor oil is getting tighter and tighter. The latest allocation gave 25 per cent of normal for cosmetics, and all use was denied for soaps. WPB announced that at normal rate of consumption there would be less than a month's supply in this country on January 1. The shortage is caused by lack of shipping space from South America. If the shipping program for next year develops as planned we will have sufficient castor beans for 60 per cent of our normal needs. In December all use of castor oil was cut to 60 per cent maximum.

Glycerine allocations vary monthly—current ones

Glycerine is now under complete allocation. The percentage allocated for various uses is announced each month. The latest schedule provided 40 per cent of normal for beverages, flavoring extracts, candy and gum; 35 per cent for cosmetics and toiletries. The Food Requirements Committee at the same time announced no edible fats or oils may be used for soap making. Under existing restrictions glycerine exemptions have been reduced from 10,000 pounds or less per month to 1,150 pounds or less. Deliveries of 50 pounds or less are unrestricted. Those who use from 50 to 1,150 pounds must certify that they are using 70 per cent of the amount they used in the base period. Consumers of glycerine use Form PD-600 to apply for supplies.

Tentative regulation for fixing retail prices of cosmetics

Tentative new price regulations have been drafted by the OPA for the consideration of manufacturers of drug and cosmetic products before being officially adopted. The tentative regulations were drafted after meetings with the manufacturers of packaged drug and cosmetic products.

The tentative regulations issued Jan. 6 are lengthy and comprehensive so that manufacturers would do well to write for a copy of the proposed regulations for study and possible action before the regulations are put in final shape.

The new regulations provide a method of fixing the maximum price. If the maximum price so established is lower than the price established under G.M.P.R. that will be the maximum price. In other words the lower price becomes the maximum price. Fair trade prices are covered. Where there is no fair trade price in effect in a state the fair trade price shall be the one in effect in the greatest number of states.

The prices of new products are also covered. The maximum retail price for a new packaged cosmetic is the retail price for the most closely comparable product or any lower price selected by the manufacturer. New packaged products which cannot be priced under the regulations shall be a price in line with the level of maximum prices established by the regulation specifically authorized by OPA. Application for such prices must be made in writing.

Fixing maximum prices for changed products is also provided for, including changes in containers or closures, formula or both. In such cases the seller's maximum price for the old product will be the price. If a change in the formula involves a decrease in quality the manufacturer must apply in writing to OPA to determine the maximum price. If a manufacturer is in doubt he should apply to OPA for an opinion.

If there is a ten per cent difference in quantity, price adjustment is required.

Where changed products which require no price adjustment under the new regulation but which differ substantially in appearance from the old product the maximum price of the changed product remains the same as the maximum price established for an old product. The manufacturer then determines maximum prices to various classes of purchasers by the method outlined in the new regulation.

The requirements as to reduction in price to compensate for reduction in quantity do not apply to changed drug and cosmetic products lists which are designed to sell at retail, where the order for them was placed prior to Sept. 6, 1942. The list includes lipstick, powders, mascara, eyebrow pencils, eye shadow, nail preparations, deodorants, brilliantines, hair pomades and rinses, perfumes, mouth washes, foot powders and creams, shaving cream, wave sets, after shaving lotions and a few others.

The regulation also provides for marking the retail price on new products or on changed products.

Maximum prices for new and changed products must be reported to OPA before making any deliveries. Deliveries cannot be made for 20 days thereafter. Such prices shall be subject to adjustment but not retroactively.

Two Army-Navy "E" awards for production excellence were awarded the Dow Chemical Co., one of the largest producers of industrial chemicals, in a presentation at Midland, Mich. Above are Major General William N. Porter, chief of Chemical Warfare Service; James W. Driver, Dow personnel director; Capt. C. D. Swain, naval inspector of ordnance; and Dr. Willard H. Dow, president. General Porter complimented Dow employes for "in some instances doubling the designated capacities of your plants."

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Basic Perfume

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Special perfume and flavor creations

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FINEST

If you make a Dentifrice or Shaving Cream, highest quality is a necessity, for no product can be better than the materials from which it is manufactured.

Use of only the finest raw materials, laboratory controlled chemical and physical characteristics, and wide experience in catering to the needs of the trade are but a few of the reasons why POWCO BRAND Neutral Soaps have helped to improve a long list of products.

Our large production and close selling margin make it possible for you to buy standardized, air floated POWCO BRAND Neutral Soaps of better quality—at a saving.

Tested Quince Seed · Powdered Neutral Soaps
Concentrated Shaving Cream Base

JOHN POWELL & CO.
116 East 32nd Street,
New York City.

Walter Conklin chosen president of Foragers of America

Walter A. Conklin, of Evans Chemetics, Inc., New York, N. Y., has been elected president of the Foragers of America, the oldest association in the cosmetic industry. At the election, December 29, the following were also elected: Richard R. Powell, vice president; Arthur J. Connolly, secretary - treasurer, and members of the board of governors for 1943-1944: Herbert T. Georgi, W. W. Neilson, Frank L. Graham, Louis S. Huntington, J. A. Curry and Joseph V. Gartlan.

Walter A. Conklin

New alcohol plant plans provide for 10,500,000 gallons annually

Plans have been made by WPB for the construction of a series of war alcohol plants. The plans are still "on the shelf" but will provide a capacity of 10,500,000 gallons a year, handling 12,000 bushels grain a day.

Elmer Tysdal goes to cosmetics section of WPB

Elmer B. Tysdal, production manager of Goldschmidt Chemical Corp., New York, N. Y., has joined the Drugs and Cosmetics Section of the WPB. His activities will involve those formerly handled by Dr. Dan Dahle, who has returned to the Food and Drug Administration and A. B. Pacini of Home Products Co.

Means of simplifying transportation receives committee's attention

The Drugs and Cosmetics Industry Transportation Advisory Committee has held a series of meetings to discuss cross hauling, long hauls, differential routings, circuitous routings and excessive hauling. Supplies produced at points closest to demand and purchase of materials and supplies from the closest supplier have been considered as a means of simplifying transportation problems. Maximum loading of carload freight has been studied.

Northam Warren Corp. war plants inspected by visiting salesmen

Northam Warren salesmen met on December 15 at the company's plant in Stamford, Conn., to discuss the Cutex and Odorono program for 1943. Plans for Cutex, centering on the introduction of a new polish shade, covered various merchandising problems based on conservation of display material, etc. Plans for sets were discussed, and models examined which make ingenious use of non-priority materials substituting for scarce metals, plastics and closures.

Felton Chemical Co. expands manufacturing and storage facilities

Felton Chemical Co., Inc., has purchased a sizeable piece of property adjacent to its plant in Brooklyn, N. Y., to accommodate the increased volume of business handled by this concern.

The new property has a frontage on Johnson Ave. of 125 ft. and is 200 ft. deep. There are several brick and concrete buildings which are being used for manufacturing purposes and a large yard for the storage of materials.

Essential oil dealers re-elect officers at annual meeting

Officers of the Essential Oil Assn. of the U. S. A. were re-elected at the Jan. 8 meeting. They are: V. H. Fischer, president; John H. Montgomery, vice-president; Robert B. Magnus, secretary-treasurer; and Charles Fischbeck and Frederick Buehler, members of executive committee. Dr. Eric Kunz gave the report of the Scientific Section and William Schilling, chairman of the Organization Activities Committee, also gave a report. President V. H. Fischer traced developments in the past year and indicated what might be expected in the coming year. A dinner preceded the meeting.

President of Elizabeth Arden is bride of Prince Evlanoff

Mrs. Elizabeth Graham Lewis, president of Elizabeth Arden, became the bride of Prince Michel Evlanoff December 30 in All Souls church, New York.

Philadelphia Cosmetic Assn elects officers

Officers of the new Philadelphia Cosmetic Assn. are: William Moran, president; H. Barr, vice president; A. Rushton, secretary, and C. Matthews, treasurer.

Givaudan-Delawanna sales meeting stresses service

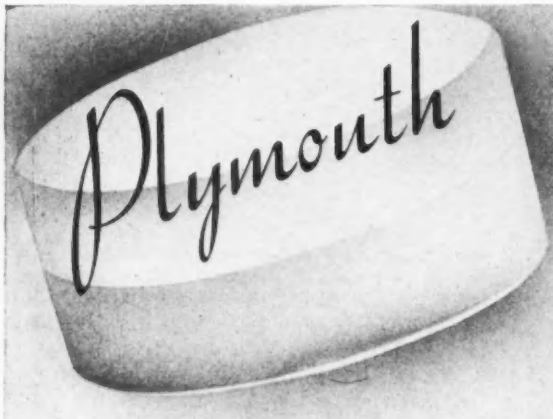
The year end sales meeting of Givaudan-Delawanna, Inc., was held earlier than usual in conformity with the expressed desires of the Office of Defense Transportation to restrict civilian travel as much as possible during and near the holiday period.

Of necessity the discussions were restricted by the conditions under which business must be operated at this time. It was emphasized that the utmost flexibility must be maintained in the organization so as to permit of the best possible service to buyers and that perhaps, indeed, intelligent service is the most important commodity which can be delivered at this time.

The salesmen were advised of plans being made to utilize plant facilities, insofar as possible, for the manufacture of products which come within the essential classification and for government work.

The meetings concluded with a dinner at the Hotel Lafayette, at which the sales department acted as host to office and plant executives and chemists.

The sales department of Givaudan-Delawanna acted as host to office and plant executives and chemists at the annual banquet



POWDER BASE NO. 7

Since the introduction of this new face powder material sales of it have constantly increased because the use of it actually represents a development in fine face powders.

Its exceptional silky, soft, smoothness, the complete absence of odor and the extremely fine particle size of it, plus its extraordinary adhesiveness actually improves a face powder in which it is used. As little as 5% added to your formula will bring about this result although it is being used in some face powder to the extent of 15% and a formula is offered showing its use in this percentage.

Samples are at your disposal and we believe that this is one of the Plymouth products which warrants a serious investigation by every face powder manufacturer because it has real merit and will improve your product.

A COMPLETE LINE OF COSMETIC RAW MATERIALS

PLYMOUTH BRAND

M. W. PARSONS

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SHERWOOD REFINING COMPANY, Inc.

The Refinery of Controlled Specialization

ENGLEWOOD, NEW JERSEY · Refinery: WARREN, PA.

Free cold inoculations for Pond's Extract Co. employees

In an effort to reduce work-hours lost through illness, Lamont-Corliss & Co., distributors of Pond's Creams and cosmetics, have instituted a system of free cold inoculations for the entire personnel of the New York office. A doctor and nurse are in attendance twice a week for the experiment, which if successful may be extended to other Lamont-Corliss offices.

Three largest soap companies charged with price fixing

Lever Bros. Co., Colgate-Palmolive-Peet Co. and Procter & Gamble Co. are charged in a federal information with fixing prices in violation of the Sherman antitrust act. The president of each company was also named a defendant. All six defendants pleaded nolo contendere and were fined $10,000 each by the U. S. District Court for the District of New Jersey.

Branch managers at Felton Chemical Co. sales convention

Felton Chemical Co., Brooklyn, N. Y., recently held a sales convention in New York. Among those attending the convention were: Robert Felton of Los Angeles, manager of Felton's western division; Murray Hartstein of Chicago, manager of the mid-western division; Hans Drasel of Philadelphia, manager of the Philadelphia branch and William Zuckerman of Boston, manager of Felton's New England division.

Allied association inducts new officers January 13

The Allied Drug & Cosmetic Assn. of Michigan inducted its new officers at the January 13 meeting in Detroit. J. E. Wilson, deputy regional director, and Truman I. Easton, office manager of the War Production Board, were the chief speakers. Officers inducted are: William Russell, president; E. E. Van Allsburg, vice president; Stewart Cowell, treasurer; M. G. deNavarre, secretary; and A. R. Vicary, G. H. Snider, Don Melville and A. S. Bedell, members of executive committee.

Atlanta Drug & Chemical Club entertain orphans

Eleven little boys, all orphans from the Atlanta Child's Home, were guests of the recently organized Atlanta Drug & Chemical Club at a Christmas celebration that ranged all the way from a day of shopping, visits with Santa, presents and all the turkey they could eat, to a final program of entertainment planned especially for their enjoyment. Two members of the club escorted each of the boys throughout the day, commencing with a shopping tour of the Atlanta department stores.

Trade Jottings

Northam Warren Corp. dedicates its new Cutex shade, On Duty, to the Waacs, the Waves, and all women in service on the home and factory fronts. It is a pastel rose shade designed for duty wear. Full page advertisements are being used to feature On Duty for the services.

Bourjois has worked out a special color harmony chart for its Evening in Paris make-up so that the consumer may select make-up to match her complexion. Six combinations of face powder, rouge and lipstick are offered. Refills for both rouge and lipstick are available.

Jergens will present two make-up aids in one box, Twin Make-up, March 1. This package will introduce Jergens new make-up cake in shades to match the face powder which is included in the package. Twin Make-up will be promoted in magazine advertisements and on the radio.

If Jonah had only known!

Animal fixatives come from warm blooded stock.

He alone had access to True Facts about Ambergris

Other life in the sea beside whales eat the same food. They also get the Belly-Ache.

AMERIS is a SEA-LIFE extract that corresponds in many uses to true Ambergris.

Sparhawk

SPARKILL, N.Y., U. S. A.

California SILVER LAKE Talc

SUFFICIENTLY SMOOTH and SOFT TEXTURED for this young fellow's tender skin . . . and Excellent for

COSMETIC PURPOSES

Despite scarcities in some quarters you don't *have* to put up with low grade talcs.

ISCO California SILVER LAKE Talc is smooth and soft, has excellent slip and exceptionally white "color".

It's available at once in Various Meshes and in a range of Bulking Values to fit your already planned containers.

Write for samples and prices.

INNIS, SPEIDEN & COMPANY

Established 1816

117 Liberty Street, NEW YORK

BOSTON • CHICAGO • CINCINNATI
CLEVELAND • GLOVERSVILLE, N. Y. • PHILADELPHIA

FOR TABLET MANUFACTURERS we have white, smooth Talc in exceptionally high quality, available from Spot stocks

ESSENTIAL OILS — DREYER — AROMATIC CHEMICALS

P.R.DREYER INC.

119 WEST 19TH STREET
NEW YORK, N.Y.

SOMETHING NEW
TO BE ADDED TO YOUR LINE

To bridge the void left by alcoholic restrictions we urge you to examine our

BASE for CREAM COLOGNE

liquid type

Produces a very easily diffused product of vanishing cream lotion type. Perfume added by cold process. Very easy to prepare. Cost to prepare $.70 per gallon (without cost of perfume).

Use your regular line of perfume scents that have been used in your alcoholic product or write to us for samples of perfume oils which we will be glad to select for you.

Send for samples and particulars.

COMPLETE LISTING OF PERFUMES

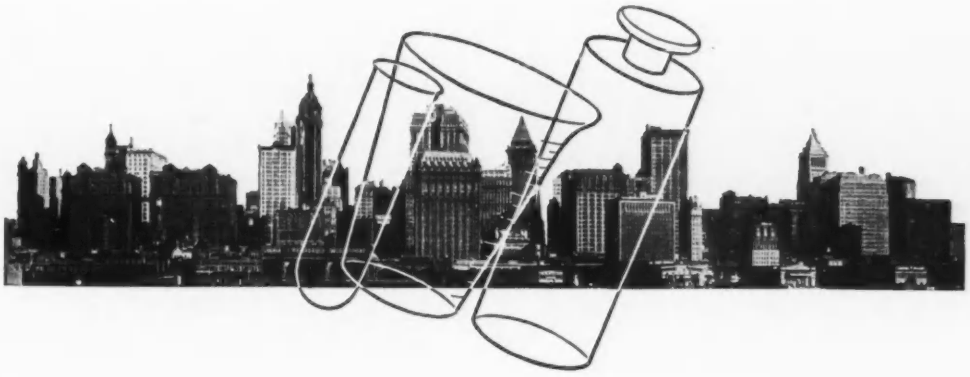
CATALOG "B"—"PERFUME SPECIALTIES"

FLOWER OILS • PERFUME SPECIALTIES

TURNER TUBES

SMART
MODERN
DURABLE
UNIFORM
COLORFUL

TURNER WHITE METAL CO., Inc. . . . New Brunswick, N. J.



Outlook for New Year Mixed in Tone

THE FINAL month in essential oils and aromatic chemicals was one typical of the market when inventory commands a more important place than selling.

The trend of essential oil prices was downward throughout the period as many holders appeared anxious to reduce stocks, but in the case of aromatic chemicals prices generally remained steady.

AROMATIC CHEMICALS STEADY

Several reasons were given for the stability of the aromatic chemical market. The major factor was the firm condition prevailing in most basic materials from which aromatic chemicals are made. Intermediates, chlorine, acetic anhydride and alcohol are exceedingly difficult to obtain. War demands for alcohol are mounting, and it is feared the government will be forced to place further restrictions on its use in civilian goods.

Another strengthening influence in the chemical market was the fact that many houses were actively engaged in the manufacture of deodorants, fly sprays and a large number of specialties for the perfume and toilet goods trades. Shampoo and liquid soap manufacturers have been confronted with a serious problem when seeking substitutes for the very essential ingredient, coconut oil. After resorting to fatty acids and vegetable oils there remained the task of eliminating certain odors that appeared in some substitutes.

MANY ORDERS FOR SPECIALTIES

Chemical manufacturers were also busy filling orders for specialties. Many articles were in demand from users of perfume odors who have encountered difficulty in producing the particular odors they need especially where formulas called for products formerly imported from abroad.

Bay and citronella were among the few oils that failed to decline and, because of export regulations at the primary center, some houses expressed the belief that prices on lemongrass have about reached the bottom. The reversal in Ceylon citronella was noted following reports that a steamer enroute here had been sunk. Spot supply of Java citronella is at a very low level and no imports have arrived for some time past. Bay oil is reported in poor supply on spot and replacement costs are sharply higher.

LOW CEILINGS AFFECT SUPPLIERS

Considerable comment has been heard regarding the fact that some suppliers of essential oils have been caught with very low price ceilings, low as compared with ceilings available to competitors. According to reports, relief from low ceilings by OPA would be welcomed. The ceilings under the General Maximum Price Regulation order have caused makers of some distilled oils to abandon production. Mace and nutmeg oils are examples.

The trend in citrus oils continued downward throughout the period under review. Although West Indian lime oil continued very firm for shipment, spot prices moved in favor of the consuming trade and surprisingly low prices were quoted on the Mexican variety. Lemon was unchanged on spot.

Mixed reports were current about the trade concerning the outlook for the coming year. In some directions it is believed most oils are about at the bottom, while in other directions it is feared that reduced outlets, because of war time restrictions and the possibility of increased arrivals from certain sections of Europe previously cut off by the war, will have a bearish influence on the general tone. Some articles already have moved lower in anticipation of fresh arrivals. Allied occupation of Reunion Island, the last remaining of the African essential oil producing regions to fall into Allied hands, was regarded as an important event since the island supplies a number of important articles, including geranium, vetiver, ylang ylang and vanilla.

DEMAND FOR NEW CROP VANILLA

There has been a fairly brisk demand for green vanilla beans from the new crop in Mexico but trade factors say they do not believe the crop is as large as earlier estimates, ranging between 250,000 to 300,000 pounds, had indicated. The new crop, according to reports reaching here from Mexico, has been completed but for some reason there are comparatively few sellers of green beans.

Import licenses for vanilla beans are being granted by the War Production Board but, in the case of Bourbon beans, it will probably take many months before sufficient steamer space can be made available to import goods. While most local houses were adhering to ceiling prices as established by OPA, there were reports of occasional small parcels offered in the trade at slightly below the maximum levels.

BEESWAX IMPORTS TO BE SMALL

Following a delay of more than a month, import licenses for beeswax finally have been granted but the quantities that will come into this market will be so small they will go directly into consumption without having the slightest effect on the general spot position. Most suppliers point out that they could sell considerable more domestic wax if it were available. The inquiry has continued at a good rate but business has been exceedingly difficult in the absence of supplies.

Tombarel

Special Perfume Creations
for all purposes
Basic Perfume Materials
Aromatic Chemicals
Essential Oils

DURING the past year we have greatly expanded our research facilities and for the coming year we plan a further extension to continue our development of interesting perfume products.

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Products Corporation
L. J. Zollinger, President
12 East 22nd Street New York, N. Y.

Certified
COSMETIC COLORS
for
LIPSTICKS
ROUGES
POWDERS
NAIL POLISHES
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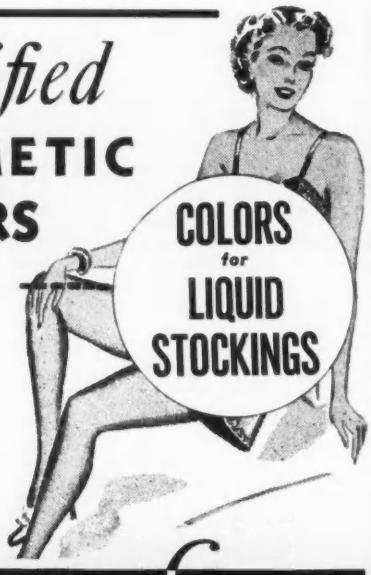
Inorganics
Titanium
Dioxide



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CORPORATION
Manufacturers of Fine Chemical Pigment Colors
General Offices, Works, and Laboratories
ROSEBANK, STATEN ISLAND, NEW YORK, N. Y.
Boston, Chicago, Los Angeles, Cleveland, Detroit, San Francisco,
Toronto, Can.

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700 Cheerful Rooms
From $2.50 Daily, Single
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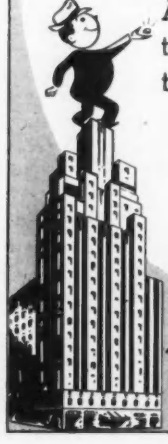

Hotel Wellington
7th AVE. at 55th ST., NEW YORK
A Knott Hotel

PRICES IN THE NEW YORK MARKET

(Quotations on these pages are those made by local dealers, but are subject to revision without notice)

ESSENTIAL OILS

Almond Bit, per lb.	4.00@	4.75
S. P. A.	4.75@	5.10
Sweet True	1.85@	2.25
Apricot Kernel	.40@	.45
Amber, rectified	1.35	Nom'l
Angelica Root	150.00	Nom'l
Anise, U. S. P.	3.00@	3.25
Imitation	2.00@	2.10
Aspic (spike) Span.	4.00@	4.80
Avocado	.90@	.95
Bay	2.00@	2.50
Bergamot	20.00@	25.00
Brazilian	10.00@	
Artificial	4.00@	9.25
Birch, sweet	2.40@	4.25
Birchtar, crude	2.25	Nom'l
Birchtar, rectified	4.25	Nom'l
Bois de Rose	4.65@	5.00
Cade, U. S. P.	1.20@	1.35
Cajeput	2.00@	2.75
Calamus	20.00	Nom'l
Camphor, "white," dom.	.30@	.35
Cananga, Java native	15.00@	15.75
Rectified	17.00@	17.75
Caraway	16.00@	17.50
Cardamon	30.00@	35.00
Cassia, rectified, U. S. P.	11.00@	11.50
Cedar leaf	.85@	1.00
U. S. P.	1.05@	1.25
Cedar wood	.65@	.80
Celery	24.75@	26.00
Chamomile	150.00	Nom'l
Cinnamon	10.50@	32.00
Citronella, Ceylon	1.25@	1.35
Java	2.25@	3.00
Cloves, Zanzibar	1.75@	2.50
Copaiba	.80@	.85
Coriander	30.00@	35.00
Imitation	8.00@	14.00
Croton	3.00@	3.75
Cubebs	4.75@	5.25
Cumin	8.75@	11.00
Dillseed	7.00@	7.50
Erigeron	2.15@	2.50
Eucalyptus	1.00@	1.16
Fennel, sweet	3.50@	4.25
Geranium, Rose, Algerian	16.00@	17.00
Bourbon	15.00@	18.00
Turkish	5.00@	5.75
Ginger	20.00@	22.00
Guaiac (Wood)	5.25@	7.00
Hemlock	1.20@	1.35
Substitute	.55@	.60
Juniper Berries	12.00@	18.00
Juniper Wood, imitation	.75@	.80
Laurel	5.00	Nom'l
Lavandin	8.00@	8.50
Lavender, French	10.00@	12.00
Lemon, Calif.	3.25@	
Lemongrass	1.50@	1.85
Limes, distilled	7.00@	8.00
Expressed	11.25@	12.00
Linaloe	3.75@	4.10
Lovage	95.00	Nom'l
Marjoram	5.50@	7.00
Neroli, Bigarde, P.	340.00	Nom'l
Petale, extra	325.00	Nom'l
Olibanum	5.00@	5.75
Opopanax	25.00	Nom'l
Orange, bitter	5.50@	6.00
Brazilian	1.45@	1.85
Calif. exp.	1.75@	2.25
Orris Root, abs. (oz.)	100.00	Nom'l
Artificial	36.00@	40.00
Orris Root, abs. (oz.)	100.00	Nom'l
Pennyroyal, Amer.	2.65@	2.80
European	2.50@	3.00
Peppermint, natural	5.40@	5.60
Redistilled	5.75@	5.90
Petitgrain	1.90@	2.25
Pimento	4.00@	7.75
Pinus Sylvestris	4.25@	5.00
Pumillonis	4.25@	4.80
Rose, Bulgaria (oz.)	25.00@	32.00
Synthetic, lb.	45.00@	55.00
Rosemary, Spanish	1.75@	3.00
Sage	8.25@	9.00
Sage, Clary	45.00	Nom'l
Sandalwood, East India	6.00@	6.75
Sassafras, natural	2.00@	2.15
Artificial	2.00@	2.25
Snake root	10.00@	12.75
Spearmint	3.25@	3.50
Thyme, red	2.60@	3.25
White	3.25@	5.00
Valerian	30.00	Nom'l
Vetivert, Java	27.00@	32.00
Wintergreen	5.25@	8.50
Wormseed	2.75@	3.10
Ylang Ylang, Manila	38.00	Nom'l

TERPENELESS OILS

Bay	2.75@	2.80
Bergamot	49.00	Nom'l
Grapefruit	65.00@	
Lavender	20.00	Nom'l
Lemon	40.00@	45.00
Lime, ex.	140.00@	160.00
Distilled	82.00@	87.00
Orange, sweet	100.00@	155.00
Peppermint	11.50@	14.00
Petitgrain	3.85@	4.00
Spearmint	5.00@	6.00

DERIVATIVES AND CHEMICALS

Acetaldehyde 50%	1.90@	2.75
Acetophenone	1.90@	2.00
Alcohol C 8	7.50@	10.00
C 9	14.00@	18.00
C 10	7.75@	12.00
C 11	11.50@	15.00
C 12	7.20@	8.50
Aldehyde C 8	22.50@	28.00
C 9	30.00@	32.00
C 10	24.00@	25.50
C 11	22.00@	26.00
C 12	30.00@	35.00
C 14 (so called)	6.00@	7.25
C 16 (so called)	8.25@	9.00
Amyl Acetate	.50@	.75
Amyl Butyrate	.90@	1.10
Amyl Cinnamate	4.50@	5.80
Amyl Cinnamate Aldehyde	3.00@	5.50
Amyl Formate	1.00@	1.75
Amyl Phenyl Acetate	3.75@	4.00
Amyl Salicylate	.80@	.93
Amyl Valerate	2.00@	2.10
Anethol	3.00@	3.25
Anisic Aldehyde	3.75@	4.00
Benzophenone	1.15@	1.30
Benzyl Acetate	.75@	1.35
Benzyl Alcohol	1.25@	1.80
Benzyl Benzoate	1.10@	1.50
Benzyl Butyrate	3.25	Nom'l
Benzyl Cinnamate	6.50	Nom'l
Benzyl Formate	3.75@	4.00
Benzyl Iso-eugenol	10.25@	11.25
Benzylidenacetone	2.25@	3.40
Borneol	1.80	Nom'l
Bornyl Acetate	2.00	Nom'l
Bromstyrol	5.00	Nom'l
Butyl Acetate	.11@	.14½
Cinnamic Acid	3.75@	4.50
Cinnamic Alcohol	3.25@	4.00
Cinnamic Aldehyde	1.65@	1.75
Cinnamyl Acetate	10.40	Nom'l
Cinnamyl Butyrate	12.00@	14.00
Cinnamyl Formate	10.00@	13.00
Citral, C. P.	4.00@	4.85
Citronellol	6.50@	6.85
Citronellyl Acetate	4.00@	5.10
Coumarin	3.00@	3.50
Cuminic Aldehyde	8.00@	11.25
Diethylphthalate	.24@	.33
Dimethyl Anthranilate	4.55@	5.00
Ethyl Acetate	.25@	.50
Ethyl Anthranilate	5.75@	7.50
Ethyl Benzoate	.90@	1.15
Ethyl Butyrate	.75@	.90
Ethyl Cinnamate	3.60@	3.80
Ethyl Formate	.60@	1.00
Ethyl Propionate	.80@	1.00
Ethyl Salicylate	.90@	1.00
Ethyl Vanillin	6.05@	6.75
Eucalyptol	2.40@	2.75
Eugenol	3.00@	3.50
Geraniol, dom.	3.00@	5.25
Geranyl Acetate	3.50@	4.00
Geranyl Butyrate	4.00@	5.75
Geranyl Formate	4.25@	6.25
Heliotropin, dom.	5.50@	7.00
Hydrotopic Aldehyde	15.00@	18.00
Hydroxycitronellal	7.75@	10.00
Indol, C. P.	30.00@	35.00
Iso-borneol	1.10@	2.00
Iso-butyl Acetate	1.25@	2.00
Iso-butyl Benzoate	2.50@	2.75
Iso-butyl Salicylate	2.70@	5.00
Iso-eugenol	3.60@	4.00
Iso-safrol	3.00	Nom'l
Linalool	7.35@	8.00
Linalyl Acetate 90%	7.25@	10.00
Linalyl Anthranilate	15.00	
Linalyl Benzoate	10.50	
Linalyl Formate	9.00@	12.00
Menthol, Japan	14.50@	16.00
Chinese	14.00@	
Synthetic	13.50	
Methyl Acetophenone	1.60@	2.00
Methyl Anthranilate	2.50@	2.80
Methyl Benzoate	.70@	1.10
Methyl Cellulose, f.o.b. shipping point	.60	Nom'l
Methyl Cinnamate	3.50@	4.00
Methyl Eugenol	3.50@	6.75
Methyl Heptenone	3.25@	
Methyl Heptine Carbonate	45.00	Nom'l
Methyl Iso-eugenol	6.25@	11.50
Methyl Octine Carbonate	24.00@	30.00
Methyl Paracresol	2.50	Nom'l
Methyl Phenylacetate	3.75@	4.00
Methyl Salicylate	.35@	.38
Musk Ambrette	6.00@	9.50
Ketone	6.00@	10.50
Xylene	2.25@	3.25
Neroline (ethyl ester)	2.00@	3.15
Paracresol Acetate	2.50	Nom'l
Paracresol Methyl Ether	2.60@	3.50
Paracresol Phenyl-acetate	6.50@	8.50
Phenylacetaldehyde 50%	3.00@	3.75
100%	4.50@	5.00
Phenylacetic Acid	3.25@	3.70
Phenylethyl Acetate	3.00@	5.00
Phenylethyl Alcohol	2.50@	3.00
Phenylethyl Anthranilate	16.00@	
Phenylethyl Butyrate	6.50@	10.00
Phenylethyl Propionate	5.00@	6.50
Phenyl Formate	12.50@	18.00
Phenyl Valerianate	16.00@	17.50
Phenylpropyl Acet.	10.00	Nom'l
Santalyl Acetate	20.00@	22.50
Skatol, C. P. (oz.)	5.35@	6.00
Styralyl Acetate	2.50@	3.00
Styralyl Alcohol	9.25@	12.00
Terpineol, C. P.	.50@	.75

(Continued on p. 85)

COLOR RIGHT

TEXTURE RIGHT

BEAUTIFUL women choose the facial cream with the finest texture and the purest color. Facial cream made with a Beehive Brand Beeswax base has a better chance to meet these requirements.

Beehive Brand Beeswax is 100% pure, it is uniform in texture and perfectly white. Our buyers select it from the finest grade of crude beeswax. It is then tested for purity, quality and uniformity in our own laboratories, and bleached by the sun and air.

Uniformity of Beehive Brand Beeswax will keep your product always up to the high standard you set for it. The quality and uniformity never change. It is entirely free from adulterants and imperfections of any kind. And back of every tablet of Beehive Brand Beeswax stands the reputation of the manufacturer.

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Cerasynt PA. For creams in which an alkaline reaction is desirable.

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(Continued from p. 83)

Terpinyl Acetate	.90@	1.00
Thymene	.45@	
Thymol	2.25@	5.25
Vanillin (clove oil)	2.60	Nom'l
(guaiacol)	2.35	Nom'l
Lignin	2.35	Nom'l
Vetivert Acetate	25.00	Nom'l
Violet Ketone Alpha	18.00	Nom'l
Beta	15.00	Nom'l
Methyl	6.50	Nom'l
Yara Yara (methyl ester)	1.85@	2.25

BEANS

Angostura	2.50@	3.00
Tonka Beans, Surinam	.70@	.95
Vanilla Beans		
Mexican, whole	11.00@	
Mexican, cut	10.00@	
Bourbon, whole	10.00@	
South American	9.50@	10.00
Tahiti	5.75@	6.00

SUNDRIES AND DRUGS

Acetone	.08½@	.09
Almond meal	.25@	.27
Ambergris, ounce	17.00@	20.00
Balsam, Copaiba	.46@	.54
Peru	1.25@	1.35
Beeswax, bleached, pure		
U. S. P.	.57@	.63
Yellow, refined	.52½@	.60½
Bismuth, sub-nitrate	1.20@	1.22
Borax, crystals, carlot ton	55.50@	58.00
Boric Acid, U. S. P., cwt.	6.95@	7.55
Calamine	.18@	.20
Calcium, phosphate	.08@	.08¾
Phosphate, tri-basic	.09@	.10
Camphor, domestic	.66½@	.81½
Castoreum	13.00@	26.00
Cetyl Alcohol	1.75	Nom'l
Pure	2.25	Nom'l
Chalk, precip.	.03½@	.06½
Cherry Laurel Water, carboy	5.75@	6.25
Citric Acid	.21	Nom'l
Civet, ounce	28.00@	49.00
Clay, Colloidal	.07@	.15
Cocoa Butter, lump	.25½@	.27
Cyclohexanol (Hexalin)	.30@	.50
Fuller's Earth, ton	15.00@	33.00
Glycerine, C. P., drums	.18¼@	.18¾
Gum Arabic, white	.42@	.45
Amber	.15@	.16
Gum Benzoin, Siam	4.00@	4.25
Sumatra	.50@	
Gum Galbanum	1.80@	2.00
Gum Myrrh	.60@	.65
Henna, pwd.	.30@	.35
Kaolin	.05@	.07
Labdanum	3.25@	5.00
Lanolin, hydrous	.35@	.36
Anhydrous	.36@	.37
Magnesium, carbonate	.09@	.10¾
Stearate	.24@	.27
Musk, ounce	50.00@	55.00
Olibanum, tears	.25@	.30
Siftings	.09@	.13
Orange Flower Water, gal.	2.00@	2.50
Orris Root, African, pwd.	1.50@	1.55
Paraffin	.06¼@	.09
Peroxide	1.10@	1.75
Petrolatum, white	.06¼@	.08½
Quince Seed	1.75@	1.90
Rice Starch	.09@	.10
Rose Leaves, red	5.45@	5.75
Rose Water, gal.	6.50@	8.00
Rosin M. per cwt.	4.20@	
Salicylic Acid	.35@	.40
Saponin	3.00@	3.25
Silicate, 40°, drums, works, 100 pounds	.80@	1.20
Soap, neutral, white	.20@	.25
Sodium Carb. 58% light, 100 pounds	1.35@	2.35
Hydroxide, 76% solid, 100 pounds	2.60@	3.75
Spermaceti	.29@	.31
Stearate Zinc	.30@	.31
Styrax	1.85@	2.25
Tartaric Acid	.64	Nom'l
Tragacanth, No. 1	3.90@	4.20
Triethanolamine	.34½	Nom'l
Violet Flowers	1.75@	2.00
Zinc Oxide, U. S. P. bbls.	.10½@	.10¾

OILS AND FATS

Castor No. 1, tanks	.13@	
Cocoanut, Manila Grade, c.i.f., tanks	.0835@	
Corn, crude, Midwest, mill, tanks	.12¾@	
Corn Oil, distilled, bbls.	.15½	Nom'l
Cotton, crude, Southeast, tanks	.12¾@	
Grease, white	.08¾@	
Lard	.1380@	
Lard Oil, common, No. 1 bbls.	.14@	
Palm, Niger, drums	.08¼@	
Peanut, refined, barrels	.17	Nom'l
Red Oil, distilled, tanks	.11½@	
Stearic Acid		
Triple Pressed	.17@	.18
Double pressed	.14@	.15
Tallow, acidless, barrels	.14¼@	
Tallow, N. Y. C., extra	.08⅝@	
Whale Oil, refined	.1070@	

Replacing Ammonia

(*Continued from p. 48*) replacements for the ammonium carbonate, use the same amount of sodium sulfite as formerly but compute the ammonium carbonate like this: (Assume you will use potassium carbonate and ammonium sulfate.) If 1.5 ounces potassium carbonate and 1.4 ounces ammonium sulfate produce 1 ounce of ammonium carbonate, then to make 3.5 ounces of ammonium carbonate, simply multiply the amount of each potassium carbonate and ammonium sulfate by 3.5, and use this amount in place of the former figure for ammonium carbonate. The formula will now read:

Sodium sulfite	3.5 ounces
Potassium carbonate (3.5 x 1.5)	5.25 "
Ammonium sulfate (3.5 x 1.4)	4.90 "
Water, oil, emulsifier qs	one gallon

Undoubtedly, the emulsifier and oil will have to be adjusted. The sulfite may have to be adjusted as well but the mathematics of the change are illustrated above.

WAVING PROPERTIES MUST BE WATCHED

Some manufacturers will stretch whatever ammonium carbonate they have on hand now by making a partial substitution. Others are going to use potassium carbonate to replace the ammonia water or/and ammonium carbonate. Some are going to add to the potassium carbonate some ammonium sulfate, just enough to give the solutions a smell of ammonia and that is all. Above all, check the waving properties of the new revised solution before marketing for it may have to be *adjusted*.

Ammonia water can be made from an ammonium salt such as the chloride or sulfate and a hydroxide such as that of sodium or potassium. Where a manufacturer has chemists on the premises, a similar conversion with these alkalis can be made as outlined above giving ammonium hydroxide and sodium or potassium chloride or sulfate. Remember that stronger ammonia water contains only 28 per cent ammonia. Your figures should be made on a basis of ammonia and not ammonium hydroxide. The experienced chemist can do this, but the inexperienced non-chemist had better stay with the ammonium carbonate replacement as a matter of safety, or have a chemist figure it out for him.

Ammonia Substitute

PARSONS AMMONIA CO., New York, N. Y., has announced Parson's household cleanser, a combination of cleansing agents, to take the place of ammonia which is no longer available on account of the demand for it for war purposes.

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1—Burt straight line duplex Automatic Labeler.
3—World, 1-Ermold semi-automatic Labeling Machines.
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2—Karl Kiefer Visco Filling Machines.
2—Karl Kiefer 72-spout Bottle Washers, m.d.
10—300 gal. Copper closed tin lined Tanks.
4—300 gal. Pfaudler jacketed Kettles, side, m.d. agitators.
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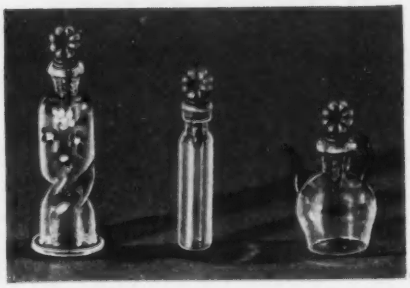

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